

Graduate Handbook
for the MA and PhD programs
of
Department of Mathematics and Statistics
Binghamton University, State University of New
York

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1 About this handbook

The purpose of the handbook:

This handbook contains the rules and procedures that govern graduate study in the [Department of Mathematics and Statistics](#) at [Binghamton University](#) leading to the MA or PhD degree.

On the MS in Data Science & Statistics program:

The department offers an MS in Data Science and Statistics that is covered in a separate handbook. The MS degree has different requirements than the MA, and the MS is not normally a step toward the PhD.

Arrangement of the handbook:

Section 2, Core Topics, is on topics that are either not dependent on the length of time that a student has been here, or that are important enough to cover separately. Section 3, Chronology, is arranged chronologically, with subsections describing what the student needs to take into account for each year of graduate study in the department.

The graduate school rules:

The [Graduate School](#) establishes the general rules for graduate study at [Binghamton University](#). These rules are found in two documents:

1. The pages on [academic policies and procedures for graduate students](#) in the [University Academic Guide](#).
2. The Graduate School's [web pages for new and current graduate students](#). The item most relevant to this handbook is the [Graduate School Manual](#).

If there is a discrepancy between this handbook and the rules of the Graduate School, the rules of the Graduate School will take precedence.

2 Core Topics

2.1 Advisors

Who the advisors are:

Every graduate student has an advisor, either temporary or permanent. For permanent advisors, both the student and the advisor have to agree with a student-advisor pairing and have the approval of the Graduate Committee in order for it to be official. An advisor must be a tenured or tenure-track member of the faculty: professor, associate professor, or assistant professor not designated as visiting. A professor outside of the

department must have a courtesy title in the department in order to advise students in the department. In spite of the use of the word “permanent”, a permanent advisor may be changed on approval of the new advisor and the Graduate Committee. Given the long term nature of the thesis work, a change of permanent advisor is considered to be an unusual event.

In rare cases, a student will enter the program with an agreement with a faculty member to be the student’s permanent advisor. This usually occurs when the student has met the faculty member prior to joining the department.

In all other cases the Graduate Director will act as a temporary advisor until the student finds a permanent advisor. Since it takes time to get to know the faculty in the department, it is assumed that finding a permanent advisor can take up to three years (six semesters).

If a permanent advisor is not found by the end of the fifth semester, the Chair of the Graduate Committee should be consulted. Note that a student can receive the MA degree (usually at the end of four semesters) without ever getting a permanent advisor.

What the advisors do:

Advisors have two functions.

1. (Performed by either a temporary or permanent advisor): give advice and approvals on course selection. Students must consult with their advisors prior to registering for classes. This will be at the end of the week before classes start, at the latest, for new students, and in the last third of the previous semester for continuing students. After consulting with their advisor, students should use the online form at the department’s webpage to register. The form will then be routed to the advisor for approval. Students should not register themselves directly through the Registrar.
2. (Performed only by a permanent advisor): advise and oversee the student’s research towards the PhD degree. In addition, the permanent advisor sets and arranges for the admission to candidacy exam (see Section 2.12) and the thesis defense (see Section 2.14) at the appropriate times. For students writing a thesis for the MA degree, rather than taking the MA examination, a permanent advisor will supervise the writing of the thesis and arrange for the defense of the thesis.

2.2 Areas within mathematics

Definition of five areas in DOMS:

Algebra, Analysis, Combinatorics, Geometry/Topology, and Statistics are the current areas of research and instruction in the [Department of Mathematics and Statistics](#). It is not expected that students take courses in all five of these areas, but some breadth is expected. There are thus “Area Distribution Requirements” that are covered here.

Definition of basic courses within each area:

The following courses are defined as *basic courses* for each of the five areas above. A student in the MA or PhD program must take certain number of basic courses from different areas.

- (i) Algebra: 507, 503, 504, 525
- (ii) Analysis: 505, 506, 508
- (iii) Combinatorics: 510, 511
- (iv) Geometry/Topology: 513, 517, 518
- (v) Statistics: 501, 502, 571, 579

Area Distribution Requirements:

For each MA or PhD student, all of the distribution requirements 1, 2 and 3 below must be satisfied. The word “area” below refers to any one of the five areas (i)-(v) listed above. The phrase “basic courses” refers to the courses listed above for each of the five areas. Courses used to satisfy requirement 1 below may also be used to satisfy requirement 2. For PhD students, the Area Distribution Requirements must be satisfied before the admission to candidacy exam is scheduled.

1. (Distribution requirement) The student must take
 - (a) at least 3 courses from one area;
 - (b) at least 2 courses from a second area;
 - (c) at least 2 courses from a third area, or at least one course each from a third and a fourth area.
2. (Basic course requirement) The student must take
 - (a) at least 2 basic courses from one area;
 - (b) at least 2 basic courses from a second area;
 - (c) at least 2 basic courses from a third area, or at least one basic course each from a third and a fourth area.

3. (Grade requirement) For MA students, the grades received in all courses above must be B– or higher; for PhD students, the grades received in all courses above must be B+ or higher.

For an MA student, if the oral examination option is chosen, the courses fitting the requirements given above must be among those that the student is examined on in the oral exam.

If the student receives a master’s degree from this department, then any or all of the courses used to satisfy the Area Distribution Requirements for the MA degree can also be used to satisfy the Area Distribution Requirements for PhD (but they must receive B+ or higher in these courses.)

Exception:

For a PhD student who receives a master’s degree from another university, if he/she has taken courses fitting the requirements above, and the transcript from that university is available, then these courses can be used to satisfy the requirements only with the approval of the student’s advisor and the Chair of the Graduate Committee.

2.3 Grades

General:

There is no uniform policy in the department on the meaning of grades, but a reasonable rule of thumb is that students expecting to complete a PhD should be getting grades of A– or A in their courses. Students expecting to receive the MA degree should be getting grades of B or higher in their courses.

As affects support:

The school will terminate monetary support for students that do not maintain a B average (3.0) or higher.

Calculating averages:

Averages are calculated using the following values:

- F = 0
- D = 1
- C– = 1.7

- C = 2
- C+ = 2.3
- B- = 2.7
- B = 3
- B+ = 3.3
- A- = 3.7
- A = 4

2.4 Graduate courses taken while an undergraduate

This only applies to graduate students in the department who were also undergraduates at [Binghamton University](#). If a student takes a graduate course in the department while an undergraduate and *uses the course to satisfy the major requirements for a bachelor's degree with a major in mathematics*, then this course cannot be used to satisfy the requirements for either the MA or the PhD degree.

2.5 Undergraduate courses taken while a graduate

This can only be done as an independent study (course number 597). There are [special rules governing the use of 597](#) to take an undergraduate course.

2.6 Courses taken outside the department

Courses taken outside the [Department of Mathematics and Statistics](#) do not count toward a degree, except by joint approval of the advisor of the student and the Chair of the Graduate Committee. Student on department and/or university financial support may only take courses that count toward a degree.

2.7 Courses presented for a degree

Each degree has credit requirements. The courses College Teaching of the Discipline (591), Thesis Research (599), Pre-dissertation

Research (698), Dissertation Research (699), Continuous Registration (700), and Research Skills (707) cannot be used to satisfy any credit requirements.

Furthermore, no course listed as a seminar may be used to satisfy any credit requirements without the approval of the Graduate Committee. Permission will not be granted unless the request is made by the student's permanent advisor.

Lastly, no course numbered lower than 500 can be used to satisfy any credit requirements under any circumstances.

2.8 Deadlines

If you plan to get a degree (MA or PhD) in a given semester, you will need to declare the candidacy by the date in the [Graduate Application for Degree \(GAFD\) and Recommendation for Award Form \(RFA\)](#) webpage. This page also has directions for declaring candidacy for a degree and information about important dates later in the semester when all paperwork (including the thesis or dissertation, if relevant) must be presented to the Graduate School. Failure to meet these deadlines could result in delayed graduation and extra expense for credits required in the following semester or summer session needed to receive the degree.

2.9 Oral Examinations

Several examinations at the graduate level are oral. These include the master's oral exam (when the oral exam option is chosen), the thesis defense for the master's thesis (when the thesis option is chosen), the admission to candidacy examination, the doctoral dissertation defense, and possibly others.

It is a policy of the department that the student being examined may bring refreshment to the exam, but that such refreshment can be only for the student being examined.

2.10 Requirements for the MA degree in Mathematics

There are four requirements for the MA degree.

1. The student must have taken 32 credits (eight courses) within the department, maintaining at least a B average in those 32 credits and having a minimum grade not lower than C- in those 32 credits. See the section on

courses presented for a degree (Section 2.7) for explanations of what courses are allowed. See the section on grades (Section 2.3) for an explanation on how averages are calculated.

2. The student must have taken and received B– or higher in courses that are used to satisfy the Area Distribution Requirements. See the section on areas within mathematics (Section 2.2) for details.
3. The student must pass Preliminary Exams in 4 courses.
4. The student must either pass an oral exam covering 4 courses taken within the department (the more common option) or present and defend a written master’s thesis. If the oral exam option is chosen, the courses chosen must be different from the student’s Preliminary Exam topics, and the student’s Preliminary Exams courses together with the student’s oral exam courses must satisfy the Area Distribution Requirements.

Preliminary Exams

Preliminary exams are written exams covering cover material from the following courses.

- 501 Probability
- 502 Statistical Inference
- 503 Algebra I
- 505 Analysis I
- 508 Complex Analysis
- 507 Linear Algebra
- 511 Combinatorics
- 513 General Topology
- 517 Algebraic Topology I

A student must take the corresponding course and earn a grade of B– or higher before taking the Preliminary exam on that course. Students with graduate level coursework from another university may use it to satisfy this prerequisite, with the approval of the Graduate Director. Students who took some of

our Basic Courses before entering our graduate program may use grades in those courses to satisfy prerequisites for taking exams.

Preliminary exams will be given during a session of one or two days immediately before the fall semester and immediately before the spring semester. Students must declare their intention to take an exam at least one month before the exam date. If a student declares an intention to take an exam on a course, and the student has gotten a grade of at least B- in that course, then the exam will be offered.

A student must take four exams in the first session they take. This first session must be no later than the session immediately before their second fall semester. It may be earlier if the student chooses: if a student enters the program with enough previous graduate credit, they may take the exams before the start of their first semester.

The normal expectation is that a student will pass all four exams at their first session. Failure to do so will be viewed as a negative when the Graduate Committee makes funding decisions for the following year, and failure to pass all four exams within the first two attempts will normally be considered grounds not to be funded for the following year. The faculty members grading the exams will give comments to the Graduate Committee on each students' performance that will also be taken into account in funding decisions.

Students who fail to pass 4 exams in their first exam session will meet with the Graduate Director to discuss their path forward. They may sit for the next pre-semester session to take exams on either new courses or courses they failed in the previous session. Students who fail to pass a total of 4 exams within these two sessions will be given a final opportunity at the end of the next spring semester.

Passing four Preliminary exams is considered a prerequisite for beginning intensive study for the oral Masters exam, for working on a Masters thesis, and for taking advanced courses that assume a higher level of sophistication. If a student finishes passing Preliminary exams at the Fall Session, the earliest they can take the Masters exam or submit a Masters thesis is near the end of the fall semester, and if they only finish passing Preliminary exams at the Early Spring Session, then the earliest they can take the Masters exam or submit a Masters thesis is near the end of the spring semester. If a student only finishes passing Preliminary exams at the Late Spring session, the earliest they can take the Masters exam or submit a Masters thesis

is near the end of the summer. Passing three Preliminary Exams will normally be viewed as a prerequisite for taking Topics courses, for pursuing a Masters thesis, or for taking Math 597 as an independent study. Exceptions will require the approval of both the instructor and the Graduate Director.

A student who does not have adequate grades to take 4 exams by the session before the start of their second fall semester, or who fails to pass a total of four exams after their final opportunity, will be severed from the program.

The Graduate Committee may make exceptions to these rules in cases of exceptional personal hardship.

The timeline here is for full-time students with no interruptions in their studies. Students who are part-time or who take a leave of absence before finishing the Preliminary Exams will, in consultation with the Graduate Director, propose an alternative timeline for attempting the Preliminary Exams. This proposal must be approved by the Graduate Committee.

The oral exam option:

If the oral exam option is chosen (the most common choice), the student is responsible for getting together the examination committee. The Master's Exam Coordinator should be consulted well in advance (at least 4 weeks) of the exam. The Master's Exam Coordinator will go over the student's transcript to find whether the student has the credit hours and the Grade Point Average needed to graduate. The Master's Exam Coordinator will also help form the examination committee.

The Examination Committee consists of 3 or more faculty members. These will typically be instructors that the student has taken courses from. If only two faculty members are needed to cover the four topics, the Masters Exam Coordinator or a member of the Graduate Committee will be the third committee member.

The oral exam should cover four 4-credit courses that the student has taken that meet the grade, average, and area distribution requirements listed above. They cannot be courses for which the student passed a Preliminary Exam. The student may use courses which are being taken at the time of the exam. In that case the examination cannot be too early in the semester. Each of the four courses must be assigned to one of the members on the Examination Committee.

Once the Examination Committee has been selected, the student must arrange a time for the oral exam which is convenient to all members on the Examination Committee. Usually

the oral exam lasts 1 hour.

If a course's material relies on prerequisite material from another course, then the student is responsible for that prerequisite material.

See the section on deadlines (Section 2.8) for important dates and information about how and when to file for the degree. This should be checked early in the semester in which the degree is expected.

The master's thesis option:

To do a master's thesis rather than the oral exam, the student must find an advisor to supervise the thesis. This should be done no later than the beginning of the second year.

The advisor must get approval from the Graduate Committee on the topic of the proposed thesis. No approval will be granted unless the student has at least a B course average at the time of the proposal and has passed three Preliminary Exams.

See the section on thesis preparation (Section 2.13) for links to guidelines from the Graduate School on preparing a thesis. See the section on thesis defense (Section 2.14) for information about the formation of an examination committee and the defense of the thesis. More details on the requirements for completing the MA degree may be found on the section on academic policies for the Master's degree in the [Graduate School Manual](#).

See the section on deadlines (Section 2.8) for important dates and information about how and when to file for the degree. This should be checked early in the semester in which the degree is expected.

2.11 Requirements for the PhD degree

There are six requirements for the PhD degree.

1. The student must have a master's degree, or the equivalent, in mathematics or a mathematical science (such as statistics). The master's degree can be from [Binghamton University](#) or from another university.
2. The student must take 24 credits (six courses) within the department after receiving the master's degree and maintaining at least a B average in those 24 credits and having a minimum grade not lower than C- in those 24 credits. A student entering with a master's degree from another

university often takes more than 24 credits while at Binghamton. The grades expected from a PhD student are considerably higher than the minimums stated. See the section on courses presented for a degree (Section 2.7) for explanations of what courses are allowed.

3. The student must have taken and received B+ or higher in courses that satisfy the Area Distribution Requirements. See the section on areas within mathematics (Section 2.2) for details. These courses can be taken before or after receiving the master's degree.
4. The student must pass Preliminary Exams in four courses. See Section 2.10 for details on the Preliminary Exams. The requirements in that section apply to all students, whether they complete their Masters at Binghamton or elsewhere.
5. Sometime during the taking of the 24 credits past the master's degree, the student must arrange for a permanent advisor. The advisor is usually an instructor from one of the courses taken at Binghamton, but this is not required. If no permanent advisor is found by the end of five semesters at Binghamton, the Chair of the Graduate Committee should be consulted.
6. After the four requirements above are satisfied, the student must be admitted to candidacy by passing an admission to candidacy exam. See the section on admission to candidacy (Section 2.12) for details.
7. The student must write and defend a doctoral dissertation. This is done with the advice of the permanent advisor. See the section on thesis preparation (Section 2.13) for links to guidelines from the Graduate School on preparing a thesis or dissertation. See the section on thesis defense (Section 2.14) for information about the formation of an examination committee and the defense of the doctoral dissertation.

More details on the requirements for completing the PhD degree may be found on the section on academic policies for the PhD degree in the [Graduate School Manual](#).

See the section on deadlines (Section 2.8) for important dates and information about how and when to file for the degree. This should be checked early in the semester in which the degree is expected.

2.12 Admission to candidacy

A student is considered to be admitted to candidacy when he/she has satisfied all requirements for the PhD except the writing of a dissertation. In other schools this is often called ABD (“all but dissertation”) or “passed the comprehensives”. Being admitted to candidacy is a requirement by the Graduate School for all students going for the PhD degree.

Admission to candidacy is accomplished by completing the first five requirements in the section on requirements for the PhD degree (Section 2.11) and passing an examination. The purpose of the exam is to verify that the student has mastered a certain amount of mathematical materials at a level deemed necessary to conduct original mathematical research.

2.12.1 Consequences and timing of admission to candidacy

For both academic and financial reasons, admission to candidacy is typically done towards the end of the fourth year of graduate study in the department.

Academic reasons

For students who earn their master’s degrees from the department, the third and fourth year are usually devoted to accumulating the required 24 credits and preparation for the admission to candidacy exam. Students that enter the department with master’s degrees can sometimes take the admission to candidacy exam earlier than the fourth year, but often take the full four years if certain courses are needed before embarking on research in the student’s chosen area within mathematics.

Failure to pass candidacy by the end of the fourth year of study will be regarded as lack of satisfactory progress toward the PhD degree unless there are exceptional circumstances.

Financial reasons

After being admitted to candidacy, a student may register for only one tuition-bearing credit. (As a paperwork matter, they may register for additional units of Continuous Registration (700 or 701) to maintain full-time status, but no tuition is charged on these credits.) See Section 2.16 for definition of full time status. For students not on financial support, this makes a difference in their education expenses. However, this also affects students on financial support, since after the fourth

year financial support from the university does not cover the cost of tuition. Thus delaying admission to candidacy past the fourth year will be costly to the student.

2.12.2 Details of the examination

1. The format of the examination is worked out by the permanent advisor in consultation with the student.
2. The proposal of the examination must be submitted by the permanent advisor to the Graduate Committee at least one month before the examination. The proposal should include the following.
 - (a) A description of the nature, format and topics of the examination.
 - (b) The proposed examination committee (including at least three faculty members from the department, including the permanent advisor him/herself) to conduct the examination. There is no requirement of an outside examiner.
 - (c) An up-to-date transcript for the student.
 - (d) A statement that the permanent advisor intends to act as advisor during the writing of the dissertation.
3. On approval of the proposal, the examination will take place and the results of the examination will be reported to the Graduate Committee.
4. Oral portions of the examination (if any) will be open to the public.
5. Written portions of the examination (if any) will be submitted to the Graduate Committee on completion of the examination and made part of the student's permanent record.
6. Successful completion of the examination will be communicated to the Graduate School by the Chair of the Graduate Committee.

If a student changes adviser after passing his/her admission to candidacy examination, he/she may be asked to pass an additional examination.

2.12.3 On delaying admission to candidacy

The following guidelines were adopted by the department concerning the length of time a student may stay in the doctoral program without being admitted to candidacy. The Graduate Committee shall recommend dematriculation to the Graduate School for any full-time student proposing to stay for more than four years without being admitted to Candidacy. Exceptions to this rule shall be governed by the following guidelines:

1. A member of the faculty may request the Graduate Committee to delay this action for one year. This request shall be made in writing during the student's eighth semester and shall be placed in the student's file. The request shall state: the student's progress to date, the reason for delaying admission to candidacy, and the faculty member's opinion of the student's prospects.
2. The same procedure shall be followed once a year from then until the student is admitted to candidacy. However, in subsequent years, the faculty member must declare his/her intention of becoming the student's dissertation adviser once the student is admitted to candidacy.
3. Graduate Committee approval of an extension for an eighth or subsequent year should be granted only in very unusual circumstances.
4. Graduate Committee approval of an extension does not necessarily imply that the Graduate Committee will recommend financial support for the student getting the extension.
5. In these guidelines the term "full-time student" includes but is not limited to any student who has received full financial support from the department or the university for eight not necessarily consecutive semesters.

2.13 Thesis preparation

The material in this section applies to both the thesis option for the MA degree and for the PhD degree.

There are [guidelines for preparing or submitting a thesis or dissertation](#) in the Graduate School Manual. There are also [instructions on preparing and submitting a thesis or dissertation](#), as well as the all important [formatting requirements for thesis and dissertation](#) on the Graduate School web pages.

The student should consult with the permanent advisor on matters of content and style.

2.14 Thesis defense

The advisor will present for approval from the Graduate Committee a thesis/dissertation committee to hear the defense of the thesis. Upon approval of the proposal by the Graduate Committee, the Chair of the Graduate Committee shall submit the required form to the Graduate School.

If the thesis is a master's thesis, the thesis committee will consist of three or more members of the department including the permanent advisor.

If the thesis is a doctoral dissertation, the dissertation committee will consist of at least three faculty members of the department including the permanent advisor plus a fourth examiner from outside the department. The outside examiner may be from another department within [Binghamton University](#), or be from another university (from any department). The outside examiner must be approved by the Graduate School unless the outside examiner is on a list maintained by the Graduate School as "pre-approved." Only faculty members from [Binghamton University](#) are on the pre-approved list. This list is available from the Chair of the Graduate Committee. An outside examiner not on the pre-approved list must supply a current curriculum vitae which demonstrates experience either supervising doctoral dissertation, or being on committees to hear defenses of doctoral dissertation.

Because of the extra level of approval for PhD dissertation defense, the proposal of a dissertation committee for PhD defense should be submitted to the Graduate Committee at least two months before the defense is scheduled. The defense is an oral presentation by the student at a time agreeable to the student and members of the committee and is open to the public.

2.15 Financial support

Some students receive financial support from the department during all or part of their time spent with the department as a graduate student. Continuation of support is contingent on making satisfactory progress toward a degree and on the availability of funds. Below are policies of the department connected to financial support.

1. Eligibility.

To maintain eligibility for financial support, a graduate student must:

- (a) maintain his/her status as a full time matriculated student in the MA or PhD program of this department,
- (b) maintain a B grade average (See [Funding Policies, and Academic Policies](#) in the Graduate School Manual),
- (c) maintain satisfactory degree progress (see point 2 below), and
- (d) satisfactorily perform whatever service responsibilities are required of him/her in connection with his/her award as determined by the chairperson of the department or by person(s) delegated by the chairperson to make that determination.

2. Satisfactory degree progress.

The Graduate Committee of the [Department of Mathematics and Statistics](#) determines which students are making satisfactory degree progress. It meets early in the spring semester of each year to review the progress of every student receiving financial aid from the department. Each student is given, no later than 15 March, a letter indicating whether the student will or will not be supported the following year; a student may be told that the support decision will depend on the student's grades during the current (spring) semester. Some considerations regarding satisfactory progress are:

- (a) In the past the Graduate Committee has considered maintenance of a B average to be satisfactory progress toward an MA provided the student can reasonably expect to complete work on the MA within a 2 year period.
- (b) Performance on Preliminary Exams factors into decisions on funding.
- (c) Maintenance of a B average is not sufficient to demonstrate satisfactory degree progress toward the PhD Academic standards for PhD students are, naturally, higher.
- (d) Under ordinary circumstances, it is expected that a student will find a permanent advisor by the end of the fourth year.
- (e) Under ordinary circumstances, it is expected that admission to candidacy will take place before the start

of the fifth year. Not to do so in the absence of extraordinary circumstances will be evidence of lack of satisfactory progress. See the section on admission to candidacy (Section 2.12).

3. Length of support.

Once a graduate student has been given an award, it is the department's intent to provide support so long as the student maintains eligibility, is making satisfactory progress towards a degree, and so long as financial resources are available to provide the funding. The following gives additional detail.

- (a) Two years of support are the maximum available to students working toward the MA degree. A student who does not yet have an MA degree is considered to be working toward the MA degree.
- (b) Six years of support is the typical maximum available to any student. This includes any years of support used before the MA degree is received if the MA degree is obtained at Binghamton. Note that to receive support past the MA degree, the higher standard of satisfactory progress needed for the PhD degree will have to be met. Funding changes occur from time to time and while six years of support are typical for those making satisfactory progress at the PhD level, only four years of total support can be considered to be guaranteed.
- (c) The department has often been able to support, as adjuncts, some PhD students who have been making satisfactory degree progress and who have exceeded the time limitations mentioned above. The dollar value of such support is lower than the support through the first six years. Adjuncts are regarded as employees of the department, and priorities in who will be funded as an adjunct past the sixth year are set by the department chair.

4. Tuition.

For students on financial support, tuition is paid by the university for the first four years of support. The tuition covered each semester is only up to the number of credits needed to have full time status. See Section 2.16 below for details of full time status. In the unusual case where a student wishes to take more credits than required for full time status, the cost of the extra credits must be born

by the student. Students desiring to learn more than the required number of courses may audit the extra courses at no extra cost.

From the fifth year on, students must pay for tuition themselves. Since admission to candidacy typically takes place at the end of the fourth year, this is not a large burden since students admitted to candidacy can arrange to pay for only one credit per semester. See the paragraph in Section 2.12.1 on the financial reasons for not delaying admission to candidacy.

2.16 Full time status

A student is considered to be full time if the student is taking at least the minimum number of credits appropriate to the level of the student. The levels and minimums are given below. Note that most courses in the department are 4 credits, while seminars are variable (starting at 1 credit).

- For those not having an MA degree and having fewer than 24 graduate credits at Binghamton, the minimum is 12 credits per semester.
- For those either having an MA degree or having at least 24 graduate credits at Binghamton, the minimum is 9 credits per semester.
- For those having been admitted to candidacy, often referred to as “all but dissertation” - ABD, the minimum is 9 credits per semester; however the student can arrange to pay for one credit each semester. See the paragraph in Section 2.12.1 on the financial reasons for not delaying admission to candidacy.

There is more discussion in the Chronology below.

3 The Chronology

Below is a year by year breakdown of what is expected of students in the MA and PhD programs. It covers various decisions, formalities, exams and other events that occur during a student’s stay here, as well as some discussion of courses.

Students that already have master’s degrees when they enter the department can skip to the section on getting the PhD degree (Section 3.2).

3.1 Getting the MA degree

The MA degree is generally obtained in two years.

3.1.1 The first year.

Almost all students will take three courses in each of their first two semesters since it is required in order to maintain full time status. Typically, this will consist of an introductory course in each of three of the areas within mathematics in the first semester and a post-introductory course in each of those three areas in the second semester.

Students aspiring to receive an MA degree should maintain at least a B average. Students aspiring to a PhD should maintain at least an A– average. Students that do not maintain a B average will need to discuss their status with the Chair of the Graduate Committee.

Before the start of the second year, students will take four Preliminary Exams. They should expect to spend substantial time in the summer after their first year preparing for these exams.

3.1.2 The second year.

Students typically take 3 courses. In the fall, at least one course should be a continuation of one of the areas taken in the first year. The remaining courses can be in the same area, in one of the three areas taken in the first year, or introductory courses in an area not taken in the first year. By the spring semester, the student should have a good idea of what the student's interests are.

During the second year, the student should make sure that the Area Distribution Requirements (see Section 2.2) for the MA degree are met. Students who have not yet passed four Preliminary exams will need to pass them within the second year.

The same grade considerations apply as for the first year.

During the spring semester of the second year, decisions will be made by the Graduate Committee based on both grades and reports from individual instructors that the student has had as to the suitability of the student's continuing past the MA degree. Students that are continued can be done so on a regular or a provisional basis.

At the end of the second year, either the oral exam is taken or a master's thesis is written and defended. See the section on

requirements for the MA degree (Section 2.10) for more information on the two options. If you plan to get the MA degree in a given semester, you will need to declare your intention early in the semester by completing the “Graduate Application for Degree” form online in the Graduate School web pages. See the section on deadlines (Section 2.8).

If you select the oral exam option, you must take the examination by the deadlines set by the Graduate School.

If you select the master’s thesis option, you must prepare and defend your thesis by the deadlines set by the Graduate School.

3.2 Getting the PhD degree

3.2.1 Students that enter with master’s degrees

A student entering with a master’s degree needs to consult carefully with an advisor as to the appropriate level of courses to take. Depending on the student’s background, the student might start with introductory courses, or they might start with courses at a higher level.

3.2.2 The third year.

During the third (and also the fourth) year, the student should ensure that the Area Distribution Requirements (see Section 2.2) for the PhD degree are met.

Students in the third year should seek to find a permanent advisor. This can occur earlier. It probably should occur earlier for students that enter with the MA degree.

If a student has obtained the MA degree early enough in the process and will have six courses beyond the MA degree by the end of the third year, the student may be admitted to candidacy during the third year. This is not typical, but has advantages. See Section 3.2.4 below on the Dissertation Year Award.

3.2.3 The fourth year.

Students in the fourth year need to prepare for admission to candidacy. This requires that at least six regular courses be taken after the MA degree, and that the student pass an admission to candidacy exam. The nature of the exam is determined by the student’s permanent advisor with the approval of the Graduate Committee. See the section on admission to candidacy (Section 2.12) for more detailed information.

3.2.4 Dissertation Year Award.

Students in their fourth year of study who have been admitted to candidacy are eligible for the Dissertation Year Award (DYA), which allows a student to remain on full support while having no teaching duties. In years where there has been more than one student eligible, the department has typically given one semester of the DYA to each of two students. Since the funding for the DYA is limited, the DYA is considered to be a competitive award. A student is nominated for the DYA by their advisor.

3.2.5 After admission to candidacy.

Students that have been admitted to candidacy generally work on their PhD dissertation under consultation with their permanent advisor. The advisor determines whether the student is demonstrating adequate progress towards the degree during this period. The section on thesis preparation (Section 2.13) should be consulted.

Details of the dissertation defense shall be arranged by the dissertation advisor in consultation with the graduate committee. See the section on thesis defense (Section 2.14) for more information.