Abbreviations and Contact Information

DGS = Director of Graduate Studies, J K Shaw, 7-5260, jks49@georgetown.edu
GPC = Graduate Program Committee (“steering committee,” membership changes periodically)
DUS = Director of Undergraduate Studies, Mary Erb, 7-2670, erbm@georgetown.edu
ADC = Business Manager, Ameika D Clark, 7-6214, adc@georgetown.edu.

I. Degree Requirements

The Masters program in mathematics and statistics at Georgetown University combines applied mathematics and statistics into a degree track that focuses on practical and professional applications. Although all students begin with a core of graduate courses emphasizing applied mathematics and statistics equally, students can subsequently tailor their curricula towards either branch or any combination. The core courses are as follows.

Math 501 Probability Theory and Applications
Math 502 Deterministic Methods of Applied Mathematics (or just Applied Math)
Math 503 Mathematical Statistics (501 is a prerequisite)
Math 504 Numerical Analysis

Course descriptions are available on the Math/Stat (http://math.georgetown.edu/courses/), Registrar (http://registrar.georgetown.edu/ during registration) or Explore (http://explore.georgetown.edu/, full course catalog) websites. Math 501, 502 and 504 can be taken in any order, although 502 is preferred and helpful before 504, and 503 can only be taken
after 501 or the equivalent. BIST 510 and 511 may be substituted for Math 501 and 503, respectively. The graduate program website is http://math.georgetown.edu/programs/graduate/.

The degree is filled out with electives adding up to a minimum of 30 credits, normally 10 courses. Each semester at least two math/stat electives are offered. Math 510 (Mathematical and Statistical Computing, which is offered every Fall) is taken by most students. It is highly recommended and acts almost as a de-facto core course, although it is not a required course. Another highly recommended course that most students take is Math 651 (Regression Methods and Generalized Linear Models), which is offered every fall and has 503 as a prerequisite. The sequence 501-503-651 constitutes a fairly comprehensive account of the foundations of modern statistics.

Every student is encouraged to take a non-math elective course in a scientific area that extends or makes use of the tools and techniques of mathematics and/or statistics. One such 3-credit course can be counted towards the degree provided that it is at the graduate level. Popular choices are from the following programs: biostatistics, computer science (Information Warfare, or high level languages), Public Policy Institute, the CCT program (http://cct.georgetown.edu/), Security Studies and the STIA program; see the websites by searching the main page http://www.georgetown.edu/. The non-math elective is highly desirable because it informs math/stat students on ways and contexts in which applied mathematics and statistics are used by other disciplines within the scientific community. These courses also form a basis for experience in conversing and consulting with math/stat users from other sciences.

Every student is also encouraged to participate in a “practical experience.” This was initially a program requirement but has been relaxed in order to promote more flexibility. Examples of practical experiences are internships, special term projects in regular graduate courses and independent research projects with Georgetown faculty members. Internships are valuable and sought-after positions with organizations around the DC area that provide practical on-the-job training, usually with significant pay, and the possibility of converting to a permanent job. Examples of internship hosts are listed on the program website. Many of the graduate courses involve special semester projects. Finally, math/stat students have worked with professors in various departments on campus to assist in modeling and analysis in research problems. These activities also count as practical experiences. Examples include the medical and business schools, and frequently these projects lead to co-authored publications.

II. Usual Course Schedules

Math 501, 502, 504, 510, Math 651 Regression and Math 656 Data Mining are offered each fall semester. Math 502, 503, 504 and Math 605 Financial Math are offered each spring semester. An additional statistics elective is usually offered each fall and spring and at least one applied math elective is offered each fall and each spring. There is usually a course involving stochastic simulation each fall. Other courses offered frequently but not on a regular basis include Math 601 (Partial Differential Equations), Math 640 (Bayesian Statistics), Math 652 (Applied Multivariate Analysis) and Math 657 (Categorical Data Analysis). Math 901 Tutorial is normally listed in the timetable of courses each semester and is used in rare circumstances for students who have special academic needs for coursework outside the usual curriculum. A registration form (http://grad.georgetown.edu/academics/academic-forms/) must be submitted at least one week before the opening of drop/add period in any semester. It is the instructor’s responsibility to work with the DGS to insure that all materials required for approvals are prepared and submitted in a timely manner. Math 991 Continuing Registration is a course place holder for students who have completed coursework requirements but have not graduated and need to be enrolled for that purpose. See the Graduate Bulletin, link in Section IV below, for details.
Tentative course schedules for upcoming semesters are listed on the Math/Stat website under Announcements (right hand panel on webpage).

No course is ever absolutely guaranteed to run and any course can be cancelled due to under-enrollment or staffing issues.

**III. Course loads**

The normal academic load for full time graduate students is 3 courses. In unusual circumstances and with strong justification and permission of the DGS and/or GPC, a full time student may attempt to carry 4 courses. Students who have full time jobs should never attempt to enroll in more than 2 courses. These maximum loads will be expected of all students and exceptions must be approved by the DGS and/or GPC.

Full time students can finish degree requirements in three semesters plus one summer. Part time students are permitted to take as long as three years; approval is required for a time extension (see next section). In particular, taking one course per semester results in ten semesters to the degree, which is more than three years and would require an extension. Although this path is unusual, it has been followed in the past and continues to be an option.

**IV. Academic Standing and Status**

The graduate school requires a GPA minimum of 3.0 in order to receive a diploma. There is a **“trap door” graduate school rule** that all students need to understand. If a student completes degree requirements for a program, then that student may not take further courses solely for the purpose of raising the GPA. This is a trap because if a student completes degree requirements but has a GPA under 3.0, then there is no way to graduate. Students who are close to completing degree requirements therefore need to carefully monitor their GPA and the performance in the last few courses.

The **Graduate Bulletin**, which can be downloaded from the site http://grad.georgetown.edu/academics/policies/, is the document that contains all rules governing academic graduate life at Georgetown. Students should download and peruse the Bulletin and are responsible for being familiar with its rules and regulations. Similarly, all math/stat students are responsible for knowing the rules set down in this **Handbook**.

Students are normally given 3 years in which to complete degree requirements. Requests for extension of time are made via the **Student Petition form**, downloadable from http://grad.georgetown.edu/academics/academic-forms/. Approval by the DGS and graduate school are required but such requests are not ordinarily controversial unless a previous time extension has been granted.

Students must either be enrolled in each regular academic term or on approved **Leave of Absence** (LoA). LoA requests are submitted using the Student Petition form and must be approved by the DGS and graduate school. Students neither taking a class nor on leave are removed from the program.

Students in the final semester should **apply to graduate** by following the instructions at the link http://grad.georgetown.edu/academics/how-to-graduate/. The application is done online and triggers a clearance procedure. The DGS will consult with the student, examine the transcript and
other records and sign the clearance sheet if all requirements have been satisfied. **Students must be enrolled during the semester that they graduate.** The course **Math 991 Continuing Registration** can be used for this purpose. Registration for this course may incur a nominal fee and carries no academic credit. See the Graduate Bulletin.

The enrollment category of **Special Student** is reserved for students who have been admitted provisionally due to not completely fulfilling normal admission conditions but who otherwise have good potential for success in the program. No one can remain in Special Student status for more than one semester, and Special Students may take no more than 6 credits. In order to be converted to Regular status, a student must earn no less than a “B” grade in each course taken as a Special Student. Special Students must request, with endorsement by the DGS, to be placed on regular status.

**V. Transfer and Consortium Courses**

**Students may transfer up to two graduate courses from previously attended institutions, not to exceed 7.5 credits, towards completion of degree requirements.** Such courses may not have been counted towards a previous degree, must have received a grade of B or better and must come from an approved accredited institution. All transfers must be approved by the DGS and/or the GPC. Transferred courses are not factored into the computation of the GPA. Requests for transfer credit are initiated through the Student petition form, previous section.

Courses may be taken through the **DC Consortium of Universities,** http://www.consortium.org/consortium/index.cfm, with mostly the same rules applying as transferred courses. Consortium courses do not count towards the Georgetown GPA. **The total of all transfer and consortium courses is limited to 2 courses, not to exceed 7.5 credits.** All consortium courses must be approved by the DGS and/or the GPA.

Special Students are not permitted to take consortium courses.

**VI. International Students**

International students are normally in the US under the provisions of F-1 Visa status and should therefore coordinate all activities with the Office of International Programs (OIP), http://oip.georgetown.edu/. It is critical for international students to work closely with OIP and to stay completely informed about all visa issues. In particular the procedures involving Optional Practical Training (OPT) and Curricular Practical Training (CPT) options should be very clearly understood. The Math/Stat Department does not ordinarily support requests for CPT, as there is no plausible way to award credit for internships.

It is also important for international students to understand that F-1 Visa holders are restricted in course loads and in the types and amounts of work that they are permitted to do, and these restrictions include internships. Federal agencies are ordinarily forbidden to hire non-US citizens, either in temporary or permanent positions. Corporations which consult for federal organizations are also normally allowed to hire only US citizens. Private corporations and non-profits do not face the same barriers but must still hire with caution, since they prefer to employ persons for whom there is an option of retaining indefinitely but then must consider the expensive process of sponsoring an international graduate for permanent residency status.

Some international students have been able to obtain internships and permanent jobs. Nevertheless it is important to realize that there are complications in doing so and that the keys to
success are persistence and a strong resume. Many international students gain practical experience through special projects in graduate courses, or through research projects on the Georgetown campus. F-1 Visa holders are ordinarily permitted to work up to 20 hours per week on campus.

VII. Five-Year Dual Degree Students

The 5-year dual degree program, or accelerated degree program, permits advanced undergraduate Georgetown mathematics majors to complete a portion of the MS degree during the senior undergraduate year. This program is open only to Georgetown undergraduate mathematics majors, and provides a way to complete both baccalaureate and MS degrees in 5 years. The Director of Undergraduate Studies (DUS) is the advisor for all dual degree students. It is critical that all such students work closely with the DUS in the planning and execution of their curricula.

Dual degree applicants should have an overall GPA of 3.5 or higher, no grades below B in mathematics courses and no more B than A grades in mathematics courses. No math/stat course taken while dual-enrolled and with grade less than B may be counted towards the graduate degree.

In the dual degree program the MS can be earned in two semesters after completing requirements for the BA or BS. Six credit hours are available for dual credit, i.e. they may be applied towards both degrees. These doubly-counted courses will normally be selected from the set of core courses in the senior year. Graduating seniors will thus have already taken at least two of the ten required courses. Two additional three credit graduate courses taken as an undergraduate may be counted towards the graduate degree, provided that these credits are not needed for the BA or BS degree. These courses are sometimes referred to as “asterisk” courses because they may appear on the undergraduate transcript with an asterisk or other symbol indicating that they are not used to satisfy BA or BS requirements and do not count towards the undergraduate GPA. Advanced students can thus potentially satisfy up to 40% of the course requirements of the MS degree in the four undergraduate years. In the final two semesters, a typical student in the accelerated degree program will carry a graduate course load of nine credits each semester. It is critical that planning for the 5-year curriculum directly involve the Dean of the College, who alone has the authority to approve which courses are to be doubly-counted and which courses, if any, should be written to the graduate transcript and not counted towards the undergraduate degree. Proposed “asterisk” courses must be submitted to the Dean by the end of the drop/add period of the last undergraduate semester. The DUS serves as adviser and coordinates the programs of all dual degree students.

To remain in good standing in the dual degree program the student must take a qualifying graduate course each semester after admission to the program.

Application for the accelerated degree includes applying to the graduate program, as an accelerated degree student. The application is usually submitted in the Spring semester of the junior year while adhering to the usual application deadline. Interested students should contact the DUS early in their junior year and should also discuss their plans with their undergraduate advisor.

Normally the dual degree student should take MATH-501 Probability Theory and Applications in the Fall of their senior year, and MATH-503 Mathematical Statistics in the Spring of their senior year. This will prepare them for additional statistics courses in the 5th year.
VIII. Student Life

The nerve center of the math/stat program is the Commons Room, 3rd floor of St Marys. Tables, desks and the computer lab are there for math/stat students to use. At nearly any hour students can be found in the area doing homework, checking email, consulting and networking. The graduate program actively encourages social networking in the student body, as it leads to better understanding of the program and courses, and provides valuable connection to the greater DC math/stat workforce.

There is a Math/Stat Graduate Student Blackboard site for posting documents, announcements and postings. The Blackboard link is https://campus.georgetown.edu/webapps/portal/frameset.jsp. Login and find the Organizations link under your name at the top right of the page. Click and scroll down to Math Grad Students. Click on the link to see announcements, and select Documents for various files on rules and strategies, including this Handbook.

Students are encouraged to participate in the frequent departmental colloquia. These and other events are posted regularly on the Math/Stat website under Announcements. The Announcements space also contains courses planned for upcoming semesters, dates of holidays, etc.

Campus maps: http://maps.georgetown.edu/

GUTS Shuttle: http://otm.georgetown.edu/guts/.

Resumes. The program works very hard in preparing students for the workplace. Each student is asked to submit a resume and to maintain it throughout the program of study. The resumes can be circulated to math/stat contacts in the area for purposes of obtaining internships and also permanent jobs.

After completing the degree, the first thing that students should do is empty their GU webmail account and set up an email forwarding tool so that all messages can be forwarded to a stable and permanent personal email account. The GU webmail is maintained indefinitely and can be a source for staying in touch with the program, student colleagues and professors.

IX. Exceptions

Reasonable exceptions to rules set down in this document may be permitted with justification. All such requests should be presented to the GPC through the DGS.