Handbook
for
GRADUATE STUDENTS
2002 - 2003
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I. INTRODUCTION

This Handbook for M.U. - MSCS Graduate Students has been prepared to answer questions of both new and continuing graduate students and to remind all MSCS graduate students of the various rules, regulations and expectations relative to their programs. Not all questions of every graduate student can be answered here and, indeed, one purpose of this handbook is to encourage students to ask questions early and often. Consult the Graduate School Bulletin, ask your fellow graduate students, ask your professors, ask any member and/or the Chairperson of the Graduate Committee (G.C.), or - ask the ultimate source of all information about Departmental goings-on, the Departmental secretaries.

Remember that this Handbook expands upon the specific details of the relationship between the individual student and the University, just as the Graduate School Bulletin defines the general terms of that relationship. Familiarize yourself with their contents!
II. THE GRADUATE COMMITTEE

Activities and Responsibilities: The Graduate Committee consists of its Chairperson and three other faculty members. This committee is responsible for supervising all the graduate programs in the Department. It evaluates applications and recommends the admission of new students. The Graduate Committee advises the Graduate School as to which individuals should be awarded Teaching Assistantships, Research Assistantships, or Tuition Scholarships. The Graduate Committee assigns to each incoming student a Faculty advisor who, in consultation with the Graduate Committee, must approve the course of study. The Graduate Committee supervises the construction, administration and evaluation of the Master’s Comprehensive Examinations and the Doctoral Preliminary Exams. The Committee is responsible for reviewing the academic performance of each graduate student in all the Department’s programs at the end of each semester.
III. THE MSCS GRADUATE PROGRAMS

A. Degrees Offered: The Department offers both the Master of Science and the Doctor of Philosophy degrees. The M.S. degree can be pursued through several specializations: Computer Science, Mathematics, Special Program for Secondary School Teachers (SPSST). In addition, the MSCS Department offers the M.S. Computing specialization jointly with the Department of Electrical and Computer Engineering as well as the M.S. degree specialization in bioinformatics. The Ph.D. is offered in mathematics in areas of specialization which reflect research strengths of the faculty. Whenever discussing M.S. degree specializations, this Handbook will address the Computer Science, Mathematics, and SPSST specializations. For information on the Computing specialization, please see www.comp.mu.edu while for the Bioinformatics specialization, please see www.brc.mcw.edu/AP.

B. Admission Requirements: Admission to the M.S. program requires an undergraduate degree in computer science, mathematics or a related field, and should include at least twelve upper division semester hours in the intended field of study. Applicants for the SPSST should hold, or be eligible to hold, a teaching certificate for secondary school mathematics. Admission to the Ph.D. program requires an undergraduate and/or master’s degree in mathematics, mastery of basic mathematics and promise for original research. Evidence of the required mastery of basic mathematics and promise for research might include, in addition to undergraduate and graduate records, copies of papers written or projects submitted and evaluations of participation in undergraduate or graduate research programs. For those students entering the Ph.D. program from the master’s program, the thesis or essay will be considered as evidence of ability to search for and synthesize source materials relative to the intended field of doctoral research. It should be noted, however, that successful completion of a master’s degree in no way guarantees admission into the doctoral program! A successful master’s student must reapply formally for admission to the doctoral program!

C. The Master’s Program

1. The Computer Science or Mathematics Specializations: These specializations are designed to accommodate the student seeking either a master’s or a doctoral degree. Individuals in this program must complete a minimum of 30 semester hours of course work. Fifteen semester hours must be at the graduate level, including year-long graduate-level courses in at least two of the following areas: algebra, analysis, topology, statistics, operations research, and computer science (for a complete list of the requirements, see the Graduate Bulletin). Upon completion of these specializations with an appropriate course of study, the student will have the necessary background for teaching at the college level, pursuing doctoral work in mathematics, statistics, or computer science, or a career in industry.

2. The Special Program for Secondary School Teachers (SPSST): The SPSST is a flexible specialization which is highly individualized to the needs of the student. It is designed for teachers with at least two years of secondary school teaching experience, who wish to pursue graduate work in mathematics to enhance their teaching, but who do not anticipate continuation of graduate study in mathematics beyond the master’s level. The Program emphasizes breadth of knowledge in a variety of mathematical areas and
their relationships to each other and to the teaching of mathematics at the secondary level. A minimum of 30 semester hours is required, including the History of Mathematical Ideas (MATH 101), and one of the Seminars in Mathematical Curriculum Development and Material (MSCS 278 or 279).

3. Course of Study: In the MSCS master’s program, the student must follow a course of study prepared in cooperation with the student’s advisor and approved by the Graduate Committee. The Department Office has "Graduate Student Program" forms for this purpose. The green copy must be completed at the beginning of the student’s studies, is kept in the Department files and must be updated regularly, with the Graduate Committee’s approval. The white copy is for the student’s records. There are two options available: Plan A (Thesis) or Plan B (Essay). Under Plan A, a thesis and 24 semester hours (8 courses) are required. At least 12 of those semester hours must be taken at the strictly graduate (200) level. Under Plan B, an essay and 30 semester hours (10 courses) are required. At least 15 semester hours must be taken at the strictly graduate (200) level. Students will automatically enter under Plan B and will need to negotiate with their advisors and the Graduate Committee if they wish to transfer to Plan A. This transfer is accomplished by filling out the change of plan form available in the Graduate School and obtaining the required signatures of approval.

4. Master's Thesis (Plan A): The thesis must be an original contribution to the discipline for which six hours of credit are normally given. The student in due time (normally in the last half of the third semester) should ask a faculty member to serve as thesis advisor. The thesis advisor need not be the academic advisor. After adequate planning the student should submit the outline of the thesis on the proper form (available in the Graduate School office) to the thesis advisor who, if he or she approves it, will submit it to the Departmental Chairperson for approval and forwarding to the Dean of the Graduate School. The Graduate School office will inform the student that the outline has been fully approved and a thesis committee appointed. After submitting the outline and obtaining approval, the student registers for thesis credit (course #299) at the next registration period. Details concerning thesis format requirements can be obtained from the Graduate School. Before the thesis is typed in final form, it is recommended that it be submitted in a readable form to all members of the thesis committee for their constructive criticism. The thesis, typed in final form, should be submitted, unbound, in triplicate, to the Graduate School office on or before the deadline date as listed in the Graduate Bulletin.

5. Master’s Essay (Plan B): In the second year of master’s study, usually at the beginning of the fourth semester, the student should select a topic of interest and ask a faculty member to serve as essay advisor. The essay advisor need not be the academic advisor. The student and essay advisor should agree upon a time frame so that the essay can be submitted to the advisor well in advance of the Graduate School deadline for submission (consult the Graduate School Bulletin!), allowing time for corrections and/or revisions. The essay should be 10-20 typed pages long. It must be well-written, free of spelling and grammatical errors, with carefully drawn illustrations (where appropriate). The level of presentation should be accessible to other graduate students in the subject area. The essay may, but need not, incorporate original research (i.e., your own new results). It
must, however, synthesize the results of the current literature (at least 5 sources) in its subject area, and it must be original work (i.e., \textit{free of plagiarism}; plagiarism includes submitting as one’s own the ideas or work of another, regardless of whether that information is used verbatim or in paraphrased form). Citation of articles and books and other matters of style should conform to that of \textit{The American Mathematical Monthly} or, with the consent of the essay advisor, another journal which publishes articles in the subject area of the essay. When the advisor approves the final version of the essay, the student should request a copy of the "Essay Approval Form" from the Department Office, obtain the signatures of the essay advisor and Department Chairperson, and then submit the form and essay to the Graduate School.

6. \textbf{Comprehensive Examination:} Current practice is for students to be tested on seven courses from their study plan, including \textbf{two graduate-level sequences and at least five graduate-level courses}. The registration form is available from the Department Office. \textit{All} courses taken must be listed, although preference for examination should be indicated; however, the Graduate Committee must approve the selection. A student should normally have completed four-fifths of the entire study plan before the Examination is taken. Examination dates are announced on the relevant notice boards.

D. \textbf{The Doctoral Program}

1. \textbf{The Ph.D. Degree:} The degree of Doctor of Philosophy in Mathematics is conferred upon recognition that a significant research project has been successfully completed. The major criterion for deciding whether a candidate’s research merits the Ph.D. degree is the judgment that all or part of the doctoral dissertation would be acceptable for publication by a major mathematical journal.

2. \textbf{Residency Requirement:} Doctoral students must spend at least one academic year of their doctoral studies in residence. The various ways in which this may be accomplished are described in the Graduate Bulletin.

3. \textbf{Course of Study:} On entering the program, each student is assigned an academic advisor by the Graduate Committee and, with the advisor’s assistance, must prepare a program of study for his/her first two years, recorded on the Department’s "Graduate Student Program" forms, available from the office (see Section C.3 above). Students are required to complete four year-long graduate-level courses, including one in algebra and one in analysis. This requirement is normally fulfilled during the first two academic years.

After passing the Preliminary Examination (see below) the remainder of the student’s program is outlined on the Graduate School’s "Doctoral Program Planning Form" (see Section 5 below), prepared in consultation with his/her Doctoral Committee Chairperson. The third year of graduate study is normally one during which the student specializes in a particular area - e.g. the theory of semigroups or biological modeling, and studies a foreign language, in preparation for the Qualifying Examination and language exam (see below). Following advancement to candidacy (also see below) a student is eligible to register for dissertation credits and to devote the bulk of his/her time to dissertation research. He/she will continue to actively participate in research seminars. See Section 8 below for deadlines for fulfilling these and other requirements.
4. **The Doctoral Committee:** The student’s Doctoral Committee is formed as soon as possible after successful completion of the basic coursework and the Preliminary Examination, by which time the student should be sure as to the area in which he/she will do research. It will be the student’s responsibility to choose, with the advisor’s help and the guidance of the Graduate Committee, the potential members of the Doctoral Committee. The Committee, consisting of five members, at least three of whom are on the MSCS Faculty, can be formed only in those areas in which the Department has considerable research strength. For this reason prospective students are informed by the advisor and the Graduate Committee which members of the Faculty (see Section IV) are eligible. The determination of eligibility is the responsibility of the Department Chairperson with the aid of the departmental Executive Committee. The Doctoral Committee is formally appointed by the Chairperson of the Department after consultation with the Graduate and Executive Committees. The Committee is a departmental body whose members will normally serve as the student’s Qualifying Examination Committee and Dissertation Committee and will conduct the student’s Defense of Dissertation, all on behalf of the Graduate School. The Chairperson of the Doctoral Committee normally serves as the student’s Dissertation Advisor.

5. **Program Planning:** The Graduate School’s "Doctoral Program Planning Form" must be completed in triplicate by the student’s advisor in consultation with the student and submitted to the Graduate School as soon as possible after completion of the Preliminary Examination (see Section 8 below). Once the form has been approved, the advisor and the student will be informed in writing. Changes in an approved plan must be submitted as amendments on a graduate school form for the purpose. This document serves as a binding contract between the student and the University during the balance of his/her studies.

6. **Language Requirements:** Advanced study in a particular area of research often involves being able to read pertinent literature in a foreign language, usually French, German or Russian and, for this reason, the Department may require that some proficiency be demonstrated. The language requirement is set by the Doctoral Committee. For students whose native language is not English, proficiency is required in one foreign language in addition to the native language. Ordinarily, proficiency in two languages must be demonstrated. However, the Doctoral Committee may reduce the number of languages required. Proficiency in a foreign language is demonstrated by passing an examination administered by the Graduate School or the Department. The student should expect to pass one language examination by the end of the third year; and the second examination, if required, within a year of the first one.

7. **Examinations**
   a. **Preliminary Examination:** This is a three-part written examination, given by the Graduate Committee in August and January of each year. Normally taken during, or at the end of, the second year of study, it is designed to ensure that the student has a good foundation in graduate-level mathematics, and requires knowledge broader and deeper than that required to pass the Master’s Comprehensive Examination. All examinations will include algebra, analysis, and a third part to
be selected by the student. Any one of Topology, Concepts of Computer Science, Probability and Statistics, Differential Equations, or Semigroup Theory could serve as the basis for the third part of the Preliminary Examination. The separate parts of the examination will normally be given on three different days of the same week, with three hours allotted for each part. A student is allowed at most two attempts at the examination. On the first attempt, he/she may take either two or three parts. If the student passes two parts, the third part must be successfully completed at the remaining attempt. If the student passes fewer than two parts, the entire examination must be retaken at the remaining attempt.

b. **Qualifying Examination:** This is an oral examination, administered by the student’s Doctoral Committee, usually within a year of completion of the Preliminary Examination (see Section 8 below). It is used to determine whether the student is adequately prepared to begin research for the dissertation. Questions in the Qualifying Exam may be wide-ranging, dealing with topics which any professional mathematician should know. Most of the examination, however, will concern the advanced coursework and reading which the student has done in his/her area of specialization.

c. **Advancement to Candidacy:** On completion of all coursework, all language requirements, the residency requirement and the Qualifying Examination, the student is formally "advanced to candidacy" by the Graduate School. He/she is then eligible to register for dissertation credits and to devote the bulk of his/her time to dissertation research.

d. **Defense of Dissertation (Final Oral Examination):** When the student approaches the completion of his/her dissertation, arrangements should be made for an oral dissertation defense. An official program announcing the defense is then prepared by the student and the department and published by the Graduate School. The proposed program must be submitted to the Graduate School at least **four weeks** before the date of the defense. The defense of the dissertation will be conducted by at least five qualified faculty members, at least three of whom are on the candidate’s Doctoral Committee. A successful defense of the dissertation constitutes the final requirement for a doctoral degree and makes the candidate eligible for the official conferral of the degree.

8. **Formal Deadlines:** Students intending to pursue a Ph.D. must complete the following requirements within the stipulated period:

a. **Preliminary Examinations:** Students entering with a bachelor’s degree must attempt these examinations within two years of beginning their graduate studies in this department, and must complete them within two and one half years of beginning their studies. Those entering with a Master’s Degree in mathematics must complete the examinations within two years of beginning their studies.

b. **Doctoral Committee:** All students must submit the names of the proposed members of the Doctoral Committee (Section 4, above) to the Graduate Committee within one month of completion of the Preliminary Examination.
c. **Doctoral Planning:** All students must submit the Doctoral Program Planning Form (Section 5, above) to the Graduate School within one month of approval of the Doctoral Committee.

d. **Qualifying Examination:** All students must attempt the Qualifying Examination within one year of completion of the Preliminary Examination. Students are urged to consult the Doctoral Committee at the time of its formation and thereafter, to ascertain the Committee’s expectations for that examination.

Failure to meet any of these deadlines will result in the suspension of financial aid and/or removal from the program, except in extenuating circumstances.

9. **The Ph.D. Dissertation:** The dissertation is the primary degree requirement and must make a significant contribution to knowledge. After advancement to candidacy, normally during the first semester in which dissertation credits are taken, the student must submit a dissertation outline to the dissertation advisor on the proper form (available in the Graduate School Office). If approved by the advisor, the outline will be submitted for approval to the Department Chairperson who then forwards the outline to the Dean of the Graduate School. On this outline form is also a list of the members of the Dissertation Committee, which consists of at least three members of the Doctoral Committee. If the outline is approved by the Dean, it will be returned to the Chairperson of the Doctoral Committee and the student will be informed by the Graduate School Office that it has been approved. When the student begins research for the dissertation, each member of the Doctoral Committee offers direction. Usually, however, the student works most closely with the dissertation advisor who, as such, normally serves as Chairperson of the Doctoral Committee. For dissertation deadlines the student should consult the academic calendar in the Graduate School Bulletin, and the Chairperson of the Graduate Committee. For the required proper format of the Ph.D. dissertation as well as other requirements of the Graduate School relative to the submission of the dissertation, the dissertation defense program, the public defense of dissertation, the final form for the dissertation, application for graduation, and microfilming of the dissertation, the student should get, from the Graduate School Office, reasonably soon after his advancement to candidacy, a copy of the Graduate School publication, "Dissertation Directives". At the conclusion of the student’s work, the Dissertation Committee evaluates the dissertation, possibly seeking the opinion of specialists outside of the Department to assist in making a judgment. When the dissertation is approved by each member of the Doctoral Committee, it is submitted to the Graduate School.

10. **Dissertation Credits:** The student should register for dissertation credits (course #399) only after Advancement to Candidacy. A student must register for a total of twelve dissertation credits. This can be done at one time or over several semesters before graduation.

E. **Course Load**

1. **Maximum:** A graduate student may register for no more than 13 credit hours during any one semester or 7 credit hours during a summer session.
2. **Graduate Assistants:** Assistants may register for no more than 10 credits in a semester. (See also V.B.4.)

3. **Foreign Language Reading Course:** A student may register for a foreign language reading course (203) in excess of the limits noted above without requiring special permission of the Graduate School Dean.

4. **Full-time Status:** A student taking 7 credit hours (regular semester), 4 credit hours (summer session), or registered for a 293 continuous enrollment course (see section G below) is considered to be a full-time student. Carefully note that audits are NOT counted in computing hours for full-time or part-time status. A student who must maintain full-time status, say for visa or loan requirements, needs to consider this fact before withdrawing from a course or switching to audit.

F. **Academic Review:** At the end of each semester, each student’s progress is reviewed by the Graduate Committee. Graduate students are expected to maintain a quality point average of at least 3.00. Doctoral students are also expected to adhere to the deadlines for completion of examinations etc (see Section D8 above). (In addition, Teaching Assistants are reviewed on the basis of the performance of their duties - see Section V). Unsatisfactory progress in one semester will result in a warning letter. Further unsatisfactory progress may result in being dropped from the Graduate School.

G. **Continuous Enrollment:** All degree graduate students must be continuously enrolled each semester in the academic year (except summer sessions) in order to maintain graduate student status. Accordingly, all degree graduate students must enroll in either (1) advisor-approved course work, (2) thesis or dissertation credits, or (3) one of the continuous enrollment courses (292 or 293) described below. Any student failing to enroll for one or more academic semesters must petition for readmission upon return and is assessed a readmission fee and fees for each semester missed. (See the Graduate School Bulletin for details.)

- 292: Part-time. Fee $100.00
- 293: Full-time. Fee $100.00.

(Staff working full-time on research or other academic work, time and effort equivalent to a full-time job.)

It is necessary that the full-time and half-time status claimed through continuous enrollment reflect the academic reality. **Continuous enrollment is NOT a means for students who otherwise do not deserve an academic status to fulfill visa or student loan requirements.**

H. **Time Limitations:** A student must complete all requirements for a master’s or doctoral degree within six years of initial registration in the program. Applications for extension must be made to the Graduate School, with the cooperation of the Graduate Committee.

I. **Teaching and Learning Seminar:** All graduate students are expected to attend this seminar; attendance is a condition of employment for TAs and RAs, unless waived. Each semester, topics related to teaching and/or the graduate program, are investigated, with contributions from faculty
and "senior" students. A student taking a full-course load need not formally register. But the seminar is a convenient way to maintain a full-time status for those taking two courses only, either by registering for the one credit or by attending as a condition of continuous enrollment (see Section G above). However students may register for only one credit in any academic year.
IV. THE FACULTY

The Faculty: As described in the preceding section, each graduate student in a Master’s Degree program must choose a thesis advisor (Plan A) or an essay advisor (Plan B) who will supervise the student in the research and writing of the master’s thesis or master’s essay. Any of the faculty members may be approached with this request but the choice of the thesis or essay advisor must also be approved by the Graduate Committee. For those students who intend to continue past the Master’s degree toward the Ph.D., it is strongly advised that the thesis or essay advisor be chosen from among those faculty members who could also serve, in the future, as the Ph.D. dissertation advisor.

When the doctoral student is reasonably sure as to the area of his/her research activities he/she will choose, with his/her advisor’s help and the assistance of the Graduate Committee, the potential members of his/her Doctoral Committee.

A LIST OF THE FACULTY MEMBERS AND THEIR RESEARCH AREA AND A LIST OF THEIR RECENT PUBLICATIONS WILL BE PROVIDED YEARLY AND BE GIVEN TO THE STUDENTS AS A SUPPLEMENT TO THIS HANDBOOK.
V. GRADUATE ASSISTANTSHIPS

A. Types of Assistantships

1. Teaching Assistants (TAs): TAs function as classroom teachers, lab or quiz instructors, or instructional assistants - e.g. tutors, paper-graders, project helpers, etc. according to the needs of the Department and the qualifications and experience of the assistant.

2. Research Assistants (RAs): RAs assist the Department in conducting research and are expected to perform research-related activity assigned by the faculty member(s) with whom they work.

3. Fellowships: A small number of MSCS students are typically supported by Schmitt or Raynor Fellowships, awarded in a competition within the Graduate School, or by other awards. A student who holds a fellowship generally has no teaching assignment, and is expected to devote full-time effort to study and research. The Department also awards two or three Earl W. Swokowski Fellowships each summer which provide stipends for full-time research for the three summer months and additional funds to support travel to attend conferences and professional meetings. The Graduate School give a certain number of Jobling Fellowships to the department every year (four this year) to supplement TA's/RA's salary. The Fellowships will be awarded to TAs/RAs based on their performances as TAs or RAs.

B. Duties

1. Departmental: Assistants are expected to work an average of 20 hours per week for the Department. The nature of their duties, the distribution of their hours over the course of the semester, and their assignment to faculty are arranged at the beginning of each semester by the Assistant Chairperson in consultation with the Graduate Committee Chairperson. Normally, first or second year TAs serve as quiz section instructors - exam/project helpers in a large lecture course like Calculus (MATH 080, 081, 082), Business Math (MATH 070, 071), Statistics (060) or Introduction to Computer Science (COSC 050, 051). In the third year, after gaining some teaching experience, an assistant may be assigned his/her own one or two sections of a multi-sectioned lower division course. A Research Assistant’s actual activities are outlined and supervised by the faculty person in charge of the particular research project. The work done by the RA must be directly associated with this research project.

2. Priorities: The Department is firm in its belief that an assistant’s first and foremost responsibility is to his/her academic work - his/her studies. He/She is a graduate student first, a graduate assistant second! So that his/her 20 hour a week work load as an assistant (for which he/she receives the monetary stipend) should not interfere with his/her studies -- his/her academic endeavors (for which he/she is granted tuition remission) -- the University imposes certain restrictions as to the course load an assistant may carry. (See Section 4 below). Thus, each assistant has dual responsibilities in his/her assistantship. Clearly, the TA has a responsibility to his/her students to do the best teaching job possible for them; the RA likewise should not neglect his/her duties toward his/her research project. On the other hand, the assistant must be very careful not
to allow enthusiasm for teaching or project work to adversely affect academics. If an assistant notices that this assistantship work load is too time consuming, he/she must discuss this with his/her supervising faculty member and/or the Graduate Committee Chairperson. Adjustments can be made!

3. **Evaluation of Performance:** Each Teaching Assistant will receive a written evaluation of his/her performance at the end of each semester, to be placed in the student’s departmental file. Satisfactory performance is a requirement for continued financial support; in addition, this evaluation will form a part of the student’s Academic Review (see Section III.F). Assistants teaching their own classes will be reviewed by the Graduate Committee and as a part of the Teaching and Learning Seminar, as well as through the use of student evaluations. Those assisting faculty in their duties will be evaluated by the supervising faculty member.

4. **Course Load Restrictions:** Graduate assistants normally carry 9 credit hours (3 classes) per semester. If a student needs to take more than 10 credit hours, a request must be submitted to the Dean of the Graduate School (pre-approved by the Graduate Committee Chairperson.) **Note,** however, that the terms of the assistantship provide for a maximum of 18 credits of tuition scholarship for the academic year. Any additional tuition credits are the financial responsibility of the assistant. See Section III.I for the effect of this limit on the Teaching and Learning Seminar.

C. **Length, Renewal, Termination**

1. **Length of Appointment:** Normally, graduate assistants are appointed on a nine-month basis and are paid on a ten-month basis -- i.e. they receive ten stipend checks for nine months’ work. The Department (via the Graduate Committee Chairperson) will inform the assistant if any duties are expected during regular University recesses. Possibilities for additional duties and additional financial recompense during recess periods (e.g. Summer Sessions) are limited. Therefore, graduate assistants who intend to remain on campus for the summer should try to budget their ten pay checks to take care of living expenses during the two off-months. Students may discuss the possibilities for summer work with the Graduate Committee. **Note** that, according to Graduate School regulations, graduate assistants are not allowed to accept additional employment for pay during the nine-month term of their assistantship appointment.

2. **Renewal of Assistantships:** Graduate assistantships are NOT renewed automatically. Current assistants may either reapply through the Graduate School or notify the Graduate Committee Chairperson, in writing, of their wish to be considered for renewal. Students who wish to transfer from the master’s program to the doctoral program must formally apply through the Graduate School. Graduate assistants who are students in a master’s degree program and who do not intend to continue on toward a Ph.D. should not anticipate more than one renewal of their assistantship appointment. All applications for renewal will be considered by the Graduate Committee along with those from new applicants.
3. **Termination of Appointments**
   
a. **Voluntary Resignation:** Assistants should realize that our department relies heavily upon their services for the entire academic year and that a mid-term resignation leaves us in a real bind. However, if it becomes absolutely necessary to resign an assistantship, the following must be done: (i) discuss the resignation with the Department Chairperson **well in advance**, and (ii) submit a signed letter of resignation to the Graduate School with the reasons for resignation explained and the exact date of resignation specified. The letter must be countersigned by the Department Chairperson. The assistant’s ID card must accompany the letter of resignation.

b. **Involuntary Termination:** An assistant will be retained only if he/she is doing acceptable work and is meeting his/her obligation to the Department and the University in an acceptable manner. This includes satisfactory academic progress (see above). Assistantships may be terminated upon recommendation by the Department. The Department Chairperson is obliged to inform an assistant that there is danger of termination as soon as it becomes evident that his/her performance is unsatisfactory in any way. A student may appeal to the Dean of the Graduate School any departmental termination recommendation but only after he/she has first brought his/her appeal to the Departmental Graduate Committee.

D. **Benefits**

1. **Stipends:** Graduate teaching and research assistantships are available for the academic year. The 2002-2003 stipends range from $10,835 to $11,360 for 20 hours per week of service over a nine-month period. Stipends are paid in ten installments with the first payment being made the last working day in August, and the last one at the end of May of the following year. Checks are to be picked up in the Department Office on the last working day of the month. Present policy does not allow advance checks to be issued. Assistants who leave the University before the last working day of the month may arrange with the Department Secretary to forward their final pay checks.

2. **Tuition Scholarships:** Graduate assistantships pay for 18 credits of tuition. Normally, assistants use the 18 tuition credits during the academic year, but not always. Any unused assistantship tuition credits, may be automatically used in the summer sessions following that academic year.

   A very limited number of Tuition Scholarships is also available to assist students who do not have stipends. Such aid is normally allocated by the Graduate Committee shortly before the commencement of each semester and is awarded on the basis of academic performance over prior semesters.

3. **Social Security Numbers:** To ensure receiving stipends you must apply for a social security number immediately. It sometimes takes two to three weeks to receive a number. After getting your number, stop in to the Department Office and report it to the Office Assistant before the 15th day of the month. You may apply for a social security number at either of the following locations or by calling the toll free #800-772-1213:
Recent changes in the law are likely to delay the issuance of social security number. The Marquette University will provide a voucher that can be cashed at the Bursar Office (Tower Hall) at 11th and Wisconsin Avenue. The vouchers will be sent with the payroll for each pay period.

4. **Taxes:** The Graduate Assistantship stipend, being given in exchange for services, is sometimes TAXABLE as income. However, there are exceptions to this. Please check with the Department Secretary on the difference.

Qualified tuition, i.e. tuition and related expenses like books, supplies and equipment, being based upon past academic performance, is tax exempt. Thus, the 18 credit tuition scholarship portion of the Assistantship IS NOT TAXABLE as income.

In order that income taxes may be properly withheld from the stipend checks, W-4 Forms must be filled out by all new TA/RAs. (International students will have the W-4 form as part of their paper.)

Students from some countries may have tax treaty exemption from state and federal taxes. **All international students must complete the forms each calendar year.** The forms are available in the MSCS Department or in the Payroll Department, Room 175, Straz Tower.

5. **Eligibility Certification:** The Immigration Law of 1986 requires that an employer certify the eligibility under the law for all new employees (even American citizens) to hold a job. This is accomplished by inspecting documents and filling out the I-9 form. This law applies to all graduate assistants. The Graduate School will handle certification for all TAs and RAs. Assistants may take care of the I-9 form at the Graduate School Office. Prior to completing the I-9 form, F-1 visa students must also present a statement from the Campus International Programs Office confirming that they are in status.

6. **Offices, Supplies, Equipment**
   a. **Offices:** Each TA/RA will be assigned an office space in CU 357, on the third floor of Cudahy Hall. Assistants should pick up their room assignments at the beginning of the term from the Department Secretary.

   b. **Keys:** Keys are issued by the Department Secretary. **These are not to be loaned out or duplicated.** At the end of your graduate program, please return the keys to the Department Secretary; DO NOT hand them to a new incoming graduate
There is a $25.00 security deposit for each key issue, if the key gets lost or not return, the Department will cash the money for the locksmith’s service charge.

c. Mail: There will be no acceptance of outgoing personal mail for any graduate student in the Department Office.

d. Office Use: Due to previous thefts of textbooks and other university property, and complaints of excessive noise, assistants’ offices are to be used STRICTLY for student contacts or personal studying. Extra curricular activities and social contacts should take place elsewhere.

e. Telephone: There is only one telephone in CU 357 (ext. #288-5422) being shared by all assistants located there. Please, no non-essential personal calls (in or out) on this extension. We ask that long distance phone calls be made from your apartment/residence phone. In that way there will be no misunderstanding as to who made them and for what purpose. Long distance calls (personal) are prohibited from being made by graduate students from any department phones.

f. Equipment, Supplies: A risograph is located in CU 336. With the exception of paper, all other supplies -- pens, pencils, grade books to be used by TAs for their teaching duties -- are supplied by the Department Office (CU 340). A new assistant can find out how to properly utilize equipment and these supplies by consulting with fellow assistants or the Department Secretaries. TAs and RAs may use the Department Xerox machine only in connection with their teaching and research duties. TAs and RAs may use the computer equipment in CU 310.

g. Textbooks and Calculators: Textbooks and calculators needed for a TA’s teaching assignment are issued by the Department Secretary. Such books and calculators are to be returned at the end of each semester.
VI. INTERNATIONAL STUDENTS

A. **Campus International Programs:** Non-immigrant foreign-born students should report to the Office of Campus International Programs (Alumni Memorial Union, room 425, telephone 288-7289) as soon as they arrive on campus. This office is the main source of information and assistance for international students and, by stopping there first, the foreign student will save much time and trouble in getting settled into the routine at M.U. Note, in particular (as stated in V.D.5), F-1 visa graduate assistants must present a statement from the Office of Campus International Programs confirming that they are in status along with the Employment Eligibility Verification (Form I-9).

B. **Post 9/11:** Immigration regulations continue to change. For up-to-date information, please consult with the Office of Campus International Programs.

C. **Course Loads:** Every foreign student admitted on a student visa must register for a full-time course load (7 or more credit hours per semester) or the continuous enrollment course 293. (See Section III.G)

D. **Language Difficulties:** Foreign students in MSCS graduate programs have presented a TOEFL (Test of English as a Foreign Language) score of at least 550. Supposedly this score (550) indicates minimum language proficiency to carry a full-time academic load. Unfortunately, passing the TOEFL does not necessarily indicate that the student has the required proficiency in the English language -- especially with respect to listening comprehension and speaking/pronunciation. Fluency in these areas is an absolute necessity, not only for the graduate student’s academic success (our programs involve many seminars, colloquia, oral exams, ... in which participation involves, primarily, the spoken word) but also for our TAs to properly carry out their assistantship duties and responsibilities. Our Department keeps receiving complaints from students who claim that they cannot understand the TA because he or she speaks too softly, or too rapidly, or with a heavy accent, or that the TA does not help them because he or she cannot understand the questions they ask. Although many of these student complaints are unjustified, we must pay attention to them. It is the graduate student’s responsibility to correct any language deficiencies he or she may have. Here are some suggestions:

- All new foreign students language skills should have been evaluated by the Office of Campus International Programs during the week of orientation. New foreign students should seriously consider taking one or more ESL (English as a Second Language) courses during both fall and spring semesters, even if this is not required on the basis of the evaluation at the end of the August orientation program for foreign teaching assistants.

- Check early and often with the Chairperson of the Graduate Committee concerning the development of your English language skills. Seek his/her advice and assistance, as well as that of your other professors and your fellow graduate students.

- As a student, contribute to the discussions in your classes. Ask questions when you do not understand what the lecturer has said or when you would like clarification or further explanation. Answer questions addressed to you or the class by the instructor or by fellow students. DO NOT remain mute to avoid being embarrassed by your less-than-perfect oral English. (Your professors will be quite sympathetic to your language problems; many
have been in similar situations themselves in the past."

- Participate actively in the Teaching and Learning Seminar.
VII. ACADEMIC DISHONESTY

To remain a credible and viable institution, Marquette University must uphold the highest standards of personal conduct and professionalism. In particular this means that, from the outset, our graduate students are expected to adhere to the strictest code of academic honesty.

It is not feasible to enumerate all possible instances of academic dishonesty, but any such enumeration would include: cheating on examinations or class projects in various ways, improperly obtaining examination questions, plagiarizing the work of others, forging signatures, falsifying records, and impersonating a candidate taking an examination. Each of these instances constitutes a conscious act of deception, and may be penalized in many different ways, ranging from a failing grade on a particular examination or project to expulsion from the University. (See also the Policies Section in the Graduate Bulletin.)
VIII. ETC.

A. **Housing:** As part of the Campus Circle development, the "Historic Cedar Square" block, between 14th and 15th Streets, north of Kilbourn Avenue, contains a variety of apartments and apartment suites that are reserved for graduate and professional students. Call Campus Circle at #87281. In addition, there is a limited number of older one-bedroom and efficiency apartments available on campus. However, most graduate students live off-campus in private housing. Information about accommodations, both on and off campus can be obtained from the Office of Residence Life, Tower Hall, Room 203, 716 N. 11th St., #87208.

B. **Health:** The Marquette Student Health Service, located in the south-east corner of the Schroeder Complex, telephone #87184, is available. Graduate students will be seen but are charged a fee for service. (Contact the Student Health Service for free information.) The Health Service is equipped to diagnose and treat most out-patient conditions. Students with medical problems requiring specialized care will be referred to appropriate resources.

In the event that you do not have your own health insurance coverage, if you are a full-time graduate student you and your dependents are eligible to purchase group medical benefits at special student rates. All students at Marquette are eligible to participate in the third party Student Health Insurance Program (SHIP) administered by Rust and Associates. Please contact the Student Health Service for additional information. International students should contact the Office of Campus International Programs regarding the health insurance they recommend.

C. **Counseling:** The Marquette University Counseling Center (2nd floor Holthusen Hall, 1324 W. Wisconsin Ave., #87172) provides individual group and outreach services to assist students with academic, career, personal, and interpersonal concerns. The Center is staffed by professional counselors, psychologists, a consulting psychiatrist and trained, student paraprofessional program assistants. Counseling services are free of charge and strictly confidential.

D. **Physical Recreation:** Memberships in the Helfaer Tennis Stadium and Recreation Center (525 N. 16th St., #86976) and the Rec Plex (915 W. Wisconsin Avenue, #87778) are available to graduate students and their families on a semester or yearly basis. The Rec Center has six air-conditioned tennis courts, a swimming pool, three handball/racquetball courts, five basketball courts, four volleyball courts, a squash court, three badminton courts, a fitness/weight room, pro shop, locker rooms, saunas, an outdoor recreation center (where you can rent camping equipment, skiing equipment, ...), and a jogging lane. The Rec Plex includes four handball/racquetball courts, a squash court, two gyms, swimming pool, suspended jogging track, two weight rooms, four locker rooms, saunas, whirlpools, steam rooms, and a fitness assessment center. Many of our faculty members and graduate students make much use of the Rec Center or Rec Plex. They are great place to unwind.

E. **Pi Mu Epsilon:** This national mathematics honorary society consists of both graduate students and advanced undergraduates. Its purpose is to support and further the mathematical interests of its members by providing an informal atmosphere in which to get together and discuss ideas. Although there is a faculty moderator, Pi Mu Epsilon is strictly a student organization and its activities are determined by its student members through their elected club officers. All MSCS graduate students are encouraged to join. (They have some dandy parties!)
F. **Association of Computing Machinery (ACM):** This worldwide society promotes the advancement of information technology (see [www.acm.org](http://www.acm.org)). Marquette has a budding student chapter which often meets on Friday afternoons to discuss computing. Again, all MSCS graduate students are encouraged to participate. For more information on the local ACM Chapter, contact Dr. Craig Struble.

G. **Colloquia:** The Department supports a colloquium program that offers graduate students an excellent opportunity to get acquainted with various branches of mathematics, statistics and computer science at a research level. There is, on the average, about one talk per week by an invited speaker and an effort is made to represent varied interests. In addition to its value as an intellectual stimulus, the program also helps the student meet distinguished scientists from various parts of the world in the informal gatherings associated with the visit. You are strongly encouraged to attend as many of these colloquia (and the pre-colloquium coffee hour and post-colloquium parties) as is possible.

*(Note: Don’t become discouraged if you "get lost" soon after the start of some colloquium lectures. Many of our faculty members will be in the same boat!)*

H. **Library:** The University’s Library System consists of over one million volumes in three facilities. Most of the books and periodicals in the mathematical sciences are located in the Science Library (southwest corner of the Schroeder Complex). Also, computerized reference service is available in the Science Library. In addition, the holdings of the University of Wisconsin-Milwaukee, the Medical College of Wisconsin, and the Milwaukee Public Library systems as well as OCLC services are available to Marquette students.

I. **Computing Facilities:** University facilities include a DEC VAX cluster (of VAX 11/780 and VAX 8600 machines) under VMS with a full complement of scientific and graphics software, laser printer and high-quality plotters. The mainframe and peripheral equipment is located in Information Technology Services (ITS) on the second floor of Cudahy Hall. In addition, ITS provides support for numerous PC laboratories around campus, in particular, the PC labs on the first and second floors of Cudahy Hall.

Departmental facilities for students include a network of SUN workstations, servers and JavaStations. Laboratories include two JavaStation laboratories, a Projects Lab complete with Linux running on PCs, a Networking Lab and Bioinformatics Laboratory. Please see [www.mscs.mu.edu](http://www.mscs.mu.edu) for more information.

J. **Milwaukee:** Marquette is an urban university, centrally located near downtown Milwaukee, easily accessible by car and bus-- major public transit routes pass through the campus. The nearby freeway connects Marquette to all points of the greater Milwaukee area, with its population of well over a million. Major airlines and railroads serve the city and Chicago’s O’Hare airport is but an hour’s drive. Marquette University has its own art museum, the Patrick and Beatrice Haggerty Museum of Art, and theatre, the Evan & Marion Helfaer Theatre.

In addition to Marquette, Milwaukee is the home of the University of Wisconsin-Milwaukee and several smaller private colleges. It offers a rich cultural life including performances by the Milwaukee Symphony, the Milwaukee Repertory Theater, the Florentine Opera, and the
Milwaukee Ballet. Marquette’s own Theater Department provides excellent productions at a very affordable price. The lakefront Arts Center offers a lively and varied permanent collection. There are numerous film societies and cinema series offering a wide variety of films at quite reasonable prices. Three or four night-clubs feature comparatively big-league rock and blues entertainment.

The Marquette Golden Eagles basketball team, of course, offers diversion for the sports fan, as do professional sport teams, the Milwaukee Bucks (basketball), the Brewers (baseball), and the Admirals (ice hockey). Milwaukee offers some recreational advantages such as an Olympic skating rink, a large marina on Lake Michigan for boating and sailing, and numerous public golf courses and tennis courts. Milwaukee is close to many skiing resorts. Milwaukee County has a large and diverse park system. Some parks afford spectacular views of Lake Michigan. The park system includes a horticultural conservatory, The Domes, located in Mitchell Park within walking distance of Marquette, as well as botanical gardens and a large, ingeniously landscaped zoo.

Ethnic groups are strong in Milwaukee, and their various cultures, from specialty restaurants down to dancing groups, contribute color and variety to life in the city.