

**Central Michigan University
Department of Mathematics**

**Graduate Student Handbook
2007-2008 Edition**

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Appendix

Part I: Graduate Degree Information

Guidelines and Policies*

If you have any questions or need further information contact the Graduate Coordinator:
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*** Any exceptions to the guidelines and policies in Part I of this graduate handbook may be granted by the Graduate Committee of the Department of Mathematics.**

Introduction

The Department of Mathematics offers the Master of Arts in Mathematics (M.A.), the Master of Arts in Teaching (M.A.T.), and the Ph.D. in Mathematics with a concentration in the Teaching of College Mathematics. The M.A. degree program has the flexibility to prepare students for jobs in business, industry and government, or for teaching mathematics at the undergraduate level or to undertake doctoral work in mathematics. The M.A.T. is designed for secondary school teachers who want to strengthen their preparation in mathematics and teaching.

The Ph.D. degree is a content-based degree designed to develop well-prepared teachers of college mathematics who combine knowledge and skill in mathematics with a desire to teach it effectively. Coursework is broadly distributed across the various areas of mathematics and is intended to help students achieve a level of sophistication in mathematical knowledge that will establish a professional attitude about mathematics. Students will be prepared to do research in traditional mathematics or in areas related to the teaching of collegiate mathematics. Emphasis on pedagogy includes two required courses in mathematics education plus a year long internship.

The department has an active faculty with particular research strengths in the areas of algebraic geometry, applied mathematics, approximation theory, combinatorics and graph theory, differential geometry, functional analysis and operator theory, mathematics education, number theory, and statistics.

Classes are small, allowing students to receive individual attention. An active colloquium program draws speakers with varied research interests from a wide range of locales. Graduate student seminars give students the opportunity to explore topics that extend beyond the required coursework. Research groups have strong links with science and engineering departments within Central Michigan University, other universities and industry. The applied mathematics group's specialty is computational and polymer fluid dynamics. Computing facilities within Pearce Hall, where the department is located, include laboratories with Macintosh and PC computers.

Being a Graduate Student

What does it mean to be a graduate student? In general, there are two main facets of graduate student life. The first is the role of being a student. Since the pursuit of a graduate degree requires dedication to the ideal that learning is a life-long endeavor, a graduate student is expected to place academic scholarship above other aspects of life.

The second facet of most graduate students' lives is that of teaching. Since most of our graduate students teach as Graduate Assistants, work with undergraduate students occupies a significant amount of their time. Duties related to this work include: preparing lessons, teaching classes, office hours, responding to student phone calls and/or e-mails, grading, and reflection on teaching. For our Ph.D. students this philosophy is particularly important since the Ph.D. program is specifically designed to prepare graduate students to take positions in academia at primarily teaching institutions. It is the balance of scholarship and teaching that can prove to be a challenge to many beginning graduate students.

The Role of the Academic Advisor

When a graduate student is admitted to a program they are assigned an academic advisor. Each graduate student must submit a two-year plan of study completed in consultation with their advisor during their first semester. A doctoral student must submit such a plan of study at two-year intervals. M.A. Advisor Worksheet and Ph.D. Advisor Worksheet can be found in the appendix of this handbook.

You and your advisor together will also complete an *Authorization of Graduate Degree Form* (found at the following web site: <http://www.grad.cmich.edu/>), which will list all the requirements you need to complete in order to earn a degree. Your advisor will be available to help you throughout your program of study.

Transferring from the M.A. to the Ph.D.

In order to transfer from the M.A. to the Ph.D. program, the student must complete a Request for Change of Program form, which can be downloaded from <http://www.grad.cmich.edu/>. Admission to the Ph.D. program must be approved by the College of Graduate Studies and the Mathematics Graduate Coordinator. A decision on which courses from the M.A. or M.A.T. can be counted towards the Ph.D. will be made by the student's advisor in consultation with the Graduate Coordinator. The number of credit hours that are transferred does not affect the total number of credit hours needed to earn a Ph.D. degree.

The Role of the Supervisor

A supervisor is a graduate faculty member selected by a graduate student based on their academic area of interest. If you are a master's student who selects Plan A (thesis)/Plan B or if you are a doctoral student you should select a supervisor as soon as you decide on your area of research interest. Your supervisor will guide you throughout the entire process of Plan B/thesis/dissertation research and writing.

- Your supervisor helps you write the Plan B paper.
- Your supervisor helps you to form a thesis/dissertation committee.
- Your supervisor chairs the thesis/dissertation committee.
- Your supervisor schedules the final oral examination in which you will defend your thesis/dissertation.
- Your supervisor advises you on and oversees the completion of the final revisions of the thesis/dissertation.

The Role of the Thesis/Dissertation Committee

In consultation with your supervisor, you will form a thesis/dissertation committee. The approval of each committee member on both the prospectus (see forms section) and the thesis/dissertation is required.

- The committee may make suggestions for revising the prospectus.
- The committee may make suggestions for revising the thesis/dissertation.
- The committee conducts the final oral examination.
- The committee determines whether the student passes the oral examination.

The committee members should receive a copy of the thesis/dissertation before the date of the final oral examination. Adequate time should be given to committee members for reading the thesis/dissertation.

Guidelines for Plan B Papers

This document describes the non-thesis Plan B option for the Master of Arts (M.A.) degree and the Master of Arts in Teaching (M.A.T.) degree. Students must complete two Plan B papers, each one under the direction of a graduate faculty member. For each Plan B paper, students must enroll in one credit of MTH 698. For students seeking the M.A.T. degree, one of those two papers must be in mathematics education and the other must be in another field of mathematics. In lieu of one Plan B paper, a student may take and pass a Ph.D. qualifying exam.

After the student has selected his/her Plan B supervisor and the student and supervisor have jointly decided on the project, the student must fill out a proposal for each Plan B paper and file it in the department office.

Proposal

Each proposal must consist of:

- A statement indicating the aim of the project.
- A short description of the project.
- A bibliography containing at least two references relating to the topic.
- The signatures of the student and of the graduate faculty supervisor.

Time Limit

The Plan B paper should be completed during the semester for which the student is enrolled in MTH 698. A presentation of the Plan B results should be given to the graduate student seminar.

Guidelines

The purpose of the Plan B paper is to allow the student an opportunity to go beyond the normally expected coursework by presenting significant evidence of scholarship and/or creative activity in one of the following areas.

- Actuarial Science
- Algebra
- Analysis
- Applied Mathematics
- Combinatorics
- Computer Science
- Geometry-Topology
- History of Mathematics
- Mathematics Education
- Number Theory
- Probability
- Statistics

Or other elective topic.

The topic will usually involve extensions or applications of material learned in class. The topic does not necessarily have to lead to new results and may be expository in nature, but should require a significant amount of work on the part of the student. Students are expected to spend at least three hours per week working on the project during the semester they are enrolled in MTH 698. Appropriate topics will vary depending on the subject matter area, but some possibilities include:

- A solution of a reasonably challenging but “do-able” problem, perhaps from a journal
- A computer simulation design
- An investigation of a topic in mathematics education
- An analysis of a “real world” problem
- An exposition of a theory or a collection of results

(Additional information regarding Plan B requirement is found on page 16)

Guidelines for Master's Thesis

Thesis Committee

The thesis (Plan A) committee must consist of a total of three faculty members, chaired by the student's thesis supervisor. It is the responsibility of the student to select the committee members in consultation with the thesis supervisor. All members of the committee must be graduate faculty at Central Michigan University. One member of the committee may be from outside the area of specialization or department.

After the committee has been selected and the thesis topic has been chosen, a Thesis Approval Prospectus must be filed in the School of Graduate Studies before the work is formally initiated (Go to www.grad.cmich.edu). At the same time, the Mathematics Department also requires a more detailed proposal to be submitted to the department office, with the approval of the committee members.

Proposal

The proposal shall consist of:

- A statement indicating the aim of the project.
- A short description of the project.
- A bibliography containing at least three references related to the topic.
- A timetable describing the different stages of the project including tentative dates of completion.
- Signatures of all the committee members approving the above.

The length of the proposal should not exceed three pages. A copy of the approved proposal must be submitted to the department office.

Time Limit

At the direction of the thesis supervisor, the student may take as many as three semesters to complete the thesis. The candidate may enroll for all or part of Math 798 during any semester or summer session. (The maximum number of credit hours in Math 798 is six.) The candidate will receive a grade (credit or no credit) in Math 798 only on satisfactory completion of the entire six hours and its acceptance by the committee. A "Z" grade will be recorded in Math 798 until the final grade is assigned. The supervisor should fill out a Plan A completion form (see forms section) and a copy will be filed with the department.

Thesis Defense

There will be an oral examination covering the student's thesis topic. The examination will be conducted by the student's thesis committee in a colloquium format. The examination must take place at least four weeks prior to the student's graduation date.

Ph.D. Qualifying Examination Policy

Each doctoral student must pass three examinations, one in each of the following areas, based on material that will be covered in the courses listed.

1. Algebra (MTH 525, 623, 625)
2. Analysis (MTH 632, 636; 633 or 637)
3. One exam selected from:
 - Applied Mathematics (MTH 520 or 586, 638, 734)
 - Combinatorics (MTH 578, 678)
 - Mathematics Education (MTH 762; PSY 589 or SED 614)
 - Statistics (STA 584, 684)
 - Topology and Foundations of Mathematics (MTH 671 or 641, 673, 645)

In the Ph.D. qualifying examinations, students are expected to demonstrate a broad knowledge of mathematics and be able to integrate mathematical concepts and explain them at an appropriate level. Full-time students have a maximum of seven regular semesters (not counting summer term) to pass the examination in all three areas. Part-time students may request the department for additional time. The mathematics department will not renew financial support for any student who does not pass all three exams by the end of the seventh semester. Two attempts in each area are allowed. A second failure in one area eliminates a student from the Ph.D. Program.

The Algebra and Analysis examinations will be offered at the beginning of the Fall Term (in August/September) and at the beginning of the Spring Term (in January). Each examination will be prepared and graded by at least two graduate faculty members in the area of examination. The format of the exam for each student will be determined by the Graduate Committee in consultation with members of the examination committee from that area.

The student will be asked to sign up for one or more examinations by the middle of March for the August/September examinations and by the middle of October for the January examinations. The Graduate Committee will announce the examination committee within two weeks after the sign-up deadline.

If a student is unable to take his/her qualifying examination at the scheduled time due to serious illness or emergency, the student must contact the Graduate Coordinator prior to the examination. The Graduate Coordinator will decide based on the evidence whether to make alternate arrangements. If the Graduate Coordinator is not available, the Department Chair or the Executive Assistant should be contacted.

The examination committee will assign an overall grade of pass or fail for each student and will report to the Graduate Committee its recommendations. The Graduate Committee will inform the student, in writing, the results of the Qualifying Examination and its decision.

Students in the M.A. or M.A.T. program may attempt any of the qualifying exams any number of times. They may only take the exams as scheduled for the doctoral program. If a master's student passes a qualifying exam, it may count as a Plan B project and can carry forward as a passed exam if they choose to continue in the doctoral program. If a master's student does not pass a qualifying exam, it will not be considered as a failed attempt should they continue in the doctoral program.

Guidelines for Ph.D. Dissertation

Upon successful completion of the qualifying examinations, the student will select a dissertation supervisor. A dissertation supervisor must be a graduate faculty member in the Mathematics Department. The student will form a dissertation committee in consultation with the dissertation supervisor. This dissertation committee will be chaired by the supervisor and must include at least three other graduate faculty members. Two members of the dissertation committee must be from the Mathematics Department. A completed doctoral dissertation must be approved by the dissertation committee, and by the College of Graduate Studies.

Students are required to register for 15 hours of MTH 898 (Dissertation). The dissertation must consist of original work and can combine scholarly, analytical, creative and expository skills. It could consist of research on a topic in mathematics or statistics, an expository or historical examination of a piece of mathematics, or research on a topic related to the teaching of collegiate mathematics. Before starting the dissertation work, the project to be undertaken must be approved by the dissertation committee, and by the College of Graduate Studies.

Upon completion of coursework, qualifying examinations, the internship, and the dissertation, the candidate for the Ph.D. degree must pass a final oral examination which is a dissertation defense in a colloquium format. The student's dissertation committee determines whether the student passes the examination.

The dissertation must be prepared according to the regulations prescribed in the College of Graduate Studies' most recent edition of the *Preparation Guide to Doctoral Dissertations, Theses, Field Studies, and Plan B Papers* and must be submitted to *Dissertations Abstracts International*.

Please go to www.grad.cmich.edu to find checklist and forms.

Internship Application Policy

The internship is designed to give practical experience in the teaching of undergraduate mathematics or statistics courses 200 level or above, excluding 500 level courses. Students are required to intern in two different courses with two different faculty members. Summer internships or internship in two courses simultaneously are not allowed.

To apply for the internship, students must complete an application form and obtain a letter from a graduate faculty member who has agreed to supervise the internship. Application materials must be submitted to the Graduate Coordinator for consideration by the Graduate Committee. The application materials must be submitted by a date to be specified by the Graduate Coordinator.

Please see page 16 for additional information on Internship.

Internship Portfolio

The internship is viewed as a capstone experience for the teaching methods acquired during MTH 761. Upon completion of each internship experience, the student will submit a portfolio. The following items that reflect the teaching methods discussed in MTH 761 are the minimum requirements to be included in the portfolio.

- a. A copy of the syllabus from the course being used for internship.
- b. A summary of different pedagogical methods used in the class giving examples of each type.
- c. A sample of lesson plans on topics explored with technology or other non-lecture pedagogy; a brief discussion of what happened when the lesson plan was implemented in the classroom; a discussion of the successes and failures of the lesson plan and why they occurred; and a discussion of what the graduate student would do differently if they used this lesson again.
- d. A brief discussion of expectations held about the students in the course and a comparison to how the students met or did not meet the expectations during the semester.
- e. A discussion of various assessment strategies used; anonymous copies of student work from each type to be included.

The portfolio will be evaluated by the graduate faculty supervisor in consultation with a Mathematics Education Area member if needed (preferably the MTH 761 instructor). A set of guidelines for evaluating the portfolio is available in the department office. The portfolio is required for the completion of the internship.

The portfolio will be available for review by other faculty members and graduate students. If the portfolio contains components that are electronic, they will be displayed on the Department of Mathematics' Intranet server.

Independent Study Policy

If you are taking a regular class (such as MTH 623 or MTH 533) as an independent study, you are required to complete an *Application for Graduate Courses by Independent Study*. This form can be found in the appendix of this handbook.

Time for Completion of Degree

Students are expected to complete all degree requirements in a timely manner. Course work and other requirements must be completed within the following time limits:

- a) Within seven years prior to the award of a master's degree
- b) Within eight years prior to the award of a doctoral degree if the student had a relevant graduate degree when beginning the program;
- c) Within ten years prior to the award of a doctoral degree if the student began doctoral study without a prior relevant graduate degree.

Graduate Teaching Assistantships

The department has a total of 30 teaching assistantships available for students in the M.A. and Ph.D. programs. Graduate Teaching Assistantships are awarded on a competitive basis.

In 2007-2008 Graduate Teaching Assistants receive the following compensation package:

- An academic year stipend of between \$10,500-14,500.
- Twenty credit hours of tuition waiver for the academic year – unused credit hours may be used in the summer.
- A summer stipend of \$1,750 for a master's student and \$2,400 for a doctoral student.
- Four (for Master's student) or five (for a Doctoral student) additional credit hours of tuition waiver with a summer appointment.

Graduate Teaching Assistants (GTAs) normally teach two sections of Beginning Algebra (MTH 055) or Intermediate Algebra (MTH 105) per semester. These courses have a supervisor whose responsibilities include:

- Organizing departmental GTA orientation and training.
- Preparing a course-pack for both MTH 055 and MTH 105.
- Writing all tests for MTH 055 and MTH 105.
- Holding regular meetings to discuss issues related to the instruction of MTH 055 and MTH 105.
- Supervising teaching of Graduate Teaching Assistants.

Experienced GTAs may ask or may be asked, to teach courses other than MTH 055 and MTH 105. During the summer sessions, Graduate Assistants normally provide tutoring for students in lower-level mathematics courses or assist a faculty member with a research project. Detailed descriptions of teaching policies are in Part II of this handbook.

Policy on Re-appointment of Graduate Teaching Assistants

Graduate Teaching Assistantships are awarded for one year. Assistantships awarded to students in a master's degree program are renewable for one additional year. Graduate Teaching Assistants enrolled in a master's degree program requesting assistantships beyond two years must compete with new applicants for such awards. Assistantships awarded to doctoral students making satisfactory progress are renewable for two or more years.

Graduate Fellowships

The department has a total of four Doctoral Fellowships and one Master's Fellowship available for students in the Ph.D. program or master's program. Fellowships are awarded on a competitive basis. This award provides a stipend (\$12,500 for Doctoral Fellowship and \$10,000 for Master's Fellowship in 2007-2008) and tuition waiver of 30 credit hours per year. Fellows do not have any teaching-related duties during the academic year.

Fellows are eligible to receive a summer assistantship that carries a stipend (\$2,400 for doctoral students and \$1,750 for master's students) and additional four or five credit hours of tuition waiver. Fellows holding a summer assistantship normally provide tutoring for students in lower-level mathematics courses or assist a faculty member with a research project.

Policy on Selection and Re-appointment of Doctoral Fellows

I. Doctoral Fellowships are awarded on a competitive basis to students who will be enrolled full-time in the Ph.D. program in mathematics. These fellowships are awarded to students who have completed a master's level degree in mathematics or who have strong mathematical preparation in their undergraduate degree.

II. During each of the two semesters of the award, recipients of Doctoral Fellowships must register for and complete at least nine graduate semester hours in the courses approved by the Mathematics Department, and must maintain a GPA of 3.0 or higher.

II. Doctoral Fellowships are awarded for one year. Doctoral Fellows making satisfactory progress may receive a fellowship for a second year.

Policy on Maximum Number of Years of Support

A graduate student who is supported with assistantship and/or fellowship by the mathematics department is eligible for such support for a maximum of seven (7) years.

Additional Funding Opportunities

The Department of Mathematics and the College of Science and Technology have funds available for graduate student professional growth activities (for example, travel funds to present research results at a conference).

In addition, the College of Graduate Studies has a number of programs that provide support for graduate students. These programs include:

- Doctoral Dissertation Support.
- Graduate Student Publication & Presentation Grant.
- Graduate Student Research Grant.
- Financial Assistance Options for International Graduate Students.

Further information and application forms for these programs may be found at: <http://www.grad.cmich.edu/>.

Criteria for Evaluation of Graduate Students

Graduate students will be evaluated periodically in order to track performance. A sample of the Graduate Student Evaluation form can be found in the appendix of this document. Students will be evaluated both in their progress towards their degree and in their teaching performance (if they are Graduate Teaching Assistants). The criteria for the evaluation of a graduate student is as follows:

Teaching Performance of Graduate Teaching Assistants

1. Preparation for and delivery of instruction:
 - Is the GA well prepared for his/her class?
 - Does the GA prepare and take all needed materials to the class?
 - Does the GA use the class time effectively?
 - Does the GA deliver mathematics instruction soundly and logically?
 - Does the GA attempt to help connect mathematical ideas in his/her lessons?
 - Does the GA assess students' progress using various methods, such as homework, quizzes and tests, in a timely manner?
 - Does the GA grade and return graded material promptly?

2. Communication with students:
 - Does the GA speak clearly and write legibly?
 - Does the GA take questions from students and answer them clearly and completely?
 - Does the GA provide students with information about syllabi, exams, tutoring hours, and department and university policies?
 - Does the GA give adequate office hours? Does the GA hold those office hours?

3. Other teaching related duties:
 - Does the GA have a clearly stated grading policy in her/his syllabus?
 - Does the GA keep accurate record of students' grades?
 - Does the GA attend all required course meetings?

Progress in the Degree Program

4. Progress in course work:

To determine the progress in course work,

 - Master's students must submit a two-year plan of study (on MA advisor worksheet) in consultation with their advisor during the FIRST SEMESTER of enrollment. The Graduate Committee will examine the grades earned in the courses (on the plan of study) and the student's GPA.
 - Ph.D. students must submit a two-year plan of study (on Ph.D. advisor worksheet) in consultation with their advisor during the FIRST SEMESTER of enrollment and then at every two-year interval. The Graduate Committee will examine the grades earned in the courses (on the plan of study) and the student's GPA.
5. Progress in Ph.D. Dissertation/Master's Plan A or Plan B:
 - Supervisors of Plan A, Plan B, or Ph.D. dissertation will be consulted by the Graduate Committee to determine student's progress.
6. Completion of Ph.D. qualifying examinations:
 - The Graduate Committee, in determining the completion of this requirement, will use the letters on file regarding qualifying examination results.
7. Completion of Ph.D. teaching internship:
 - The Graduate Committee, in determining the completion of this requirement, will use internship portfolios and comments from course supervisors.

Additional Information/Forms

Admission to Candidacy for Doctoral Degree

Doctoral students must complete an Admission to Candidacy for Doctoral Degree form. This form should be completed after passing three qualifying examinations but prior to beginning the dissertation. This form can be found at <http://www.grad.cmich.edu/>.

Authorization of Graduate Degree Program

The student and the advisor complete this form. For the M.A., the form should be completed during the first semester. For doctoral students, the form should be completed once the student has chosen an area of specialization. This form can be found at <http://www.grad.cmich.edu/>.

Course Substitution Form

The student and the advisor complete this form together and the form is only needed if there is going to be a change to the courses listed on the Authorization of Degree Program form. This form can be found at <http://www.grad.cmich.edu/>.

Graduation Application

Prior to graduating, the student must complete a Graduation Application form and submit the form to the College of Graduate Studies. Upon receipt of this form the College of Graduate Studies will conduct a graduation audit. At this point, the student might also want to complete a Self Audit for Graduation form. This form can be found at <http://www.grad.cmich.edu/>.

Prospectus for Theses, Doctoral Research Project, or Doctoral Dissertation

This form is needed for all master's students selecting Plan A, and for all doctoral students. The student and the dissertation/thesis advisor together will complete this form. Upon receipt of this form, the College of Graduate Studies will send the student a copy of the Preparation Guide for Doctoral Dissertations, Doctoral Research Projects and Theses. This form can be found at <http://www.grad.cmich.edu/>.

Plan A & B Completion Sign-off Form

This form must be completed by students pursuing a master's degree. The student and the advisor complete this form. The form must be completed after all requirements for the degree have been completed. This form can be found at <http://www.grad.cmich.edu/>.

The following forms are found in the appendix of this handbook:

Application for Graduate Courses by Independent Study

Students are required to complete this form only if they plan to satisfy a course requirement in their degree program by independent study. This form is not required for independent study courses MTH 597, 697, 797, and STA 597.

Application for Internship in the Ph.D. Program

Doctoral students, under consultation with their Graduate Faculty supervisor, must complete this form in order to start the internship. This form must be submitted by a date to be determined by the Graduate Committee.

Graduate Student Evaluation

This is a sample of the document that the Graduate Committee and the Graduate Coordinator will fill out during the time of reappointment.

M.A. Advisor Worksheet

This form is for M.A. students. The form lays out a student's two year plan of study in the M.A. program. It is to be completed with the student's advisor during the first semester of the M.A. degree.

Ph.D. Advisor Worksheet

Doctoral students will complete this form during their first semester and at two year intervals along with their advisor. It lays out a two-year plan of study for students in the Ph.D. program.

Part II:

Graduate Teaching Assistant Information

If you have any questions or need further information contact the Supervisor of Graduate Teaching Assistants:

Linda Smoke

Pearce 201J

Office phone: 774-3295

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Introduction

The information included here is designed to give you a quick reference for daily questions/problems/concerns you may encounter as a teaching assistant in the Mathematics Department at Central Michigan University. It should be used together with the textbook publisher's material to make your job of teaching your courses as easy as possible. Be sure to read through all material in Part II of this handbook before teaching your first class.

Most of you will be teaching MTH 105 (Intermediate Algebra) your first semester. This three-hour course meets either two or three times a week for the entire semester. You will be supervised in your teaching of MTH 105. While exams will be written on the departmental level, you will be responsible for writing quizzes and/or study sheets for your students. You will administer, proctor, and grade exams, quizzes, and homework assignments, and you will assign final grades for your students.

Your MTH 105 students should be familiar with basic arithmetic – fractions, decimals, percents, ratios, and beginning algebra concepts including linear equations, graphing, exponent rules, and applications using these concepts. In MTH 105 we stress applications (mixture, distance/rate/time, inequalities, etc.) that use algebraic methods (factoring, use of systems of equations, etc.) as well as teach functions, graphs, rational expressions, rational exponents, and other algebra topics.

Some of your MTH 105 students dislike and/or fear mathematics and have never been very good at it. You will need to be non-threatening and supportive to them as a teacher. Go as slow as the syllabus in the student course pack allows. (This will still be too fast for some of them.) Give your students plenty of opportunities to ask questions, and never belittle or embarrass them, even if you think a question is trivial.

After your first year of teaching you may be asked to teach other courses beyond MTH 105, in which case you will be responsible for preparing all exams and materials for the class. You will be supervised in teaching these classes.

Your Responsibilities

Classroom Instruction

Most of you will be teaching sections of around 35- 40 students. Do prepare, even if this material is pretty easy for you. Have a written set of lecture notes, and have examples and problems, especially story problems, worked out completely. Try to find more than one approach to get to the solution of a problem so that you can explain problems effectively. You should be prepared to set up and work every problem in the assignment. If you do run into trouble in explaining a problem, politely ask if you could have some more time to think about the problem and that you will finish the problem next time. Then do it! There is nothing students hate worse than a teacher who promises to show them something next time and then forgets to do it (or still cannot do it the next day)! We will address teaching issues/techniques in our course meetings.

If You Can't Meet Your Class

During the semester, you may end up getting sick, having to go to a funeral, or having some other situation happen where you will need to miss class. If possible, you should find your own substitute teacher (preferably an instructor teaching another section of the same class). If you cannot find a substitute, let your supervisor know at once (call him/her at home or at work). Classes will not be canceled unless there is a University cancellation. Never cancel class for a personal reason! Information about weather-related University cancellations can be obtained by calling 7500.

Office Hours

You are required to hold a minimum of three office hours per week. You will be asked to hold one of the three office hours per week tutoring at the Mathematics Assistant Center. Please try to schedule these times at regular intervals that will be conducive to students being able to find you and to make use of your time. Whatever time you schedule and announce to your students should be rigorously observed. If you need to cancel an office hour for some reason, let your students know, and schedule another make-up hour sometime in the near future. Submit your hours to the Department office for posting on the Math Department web page and on the office bulletin board outside PE214.

Testing and Grading

If you are teaching MTH 055 or MTH 105, all instructors give the same exams and use the same grading scale. Information about grading and testing will be presented at instructor meetings for these courses. If you are teaching courses beyond MTH 105, you will construct your own exams and grading scales. Whatever course you teach, it is important to be consistent and fair in assigning grades.

Students should be evaluated in some way (quiz, homework, written work, or exam) at least once a week. They need frequent feedback on how they are doing. Frequent evaluation encourages attendance and motivates the students to do the work. The daily grade should accurately reflect what the student knows and what effort he/she is putting forth. Use a combination of in-class quizzes and homework or group work. **DO NOT** rely solely on homework or take-home quizzes; a student is expected to recall information without notes, textbook, or friends to help!

For MTH 105 and MTH 055 classes, no extra credit should be given during the semester, except for that which is on the hourly exams. Occasionally we will agree to offer a bit of extra credit, but that will be a decision from an instructor meeting that we all will follow. It is not fair to some classes if another instructor is handing out extra credit opportunities. If you wish to drop some quiz scores, or give a makeup quiz if the class did not do well on a particular quiz, or give an open book or group quiz, that is fine.

Attendance

Take attendance each day in some way. During the semester you may be contacted by the athletic department checking on how many times a student-athlete has missed class, what assignments are missing, etc. If a student has Veteran's financial aid and fails the course, then at the end of the semester you are required to inform the Veterans' Office as to the student's last day of attendance. If you are giving a quiz or collecting homework, this can act as an attendance check; otherwise you can just pass a sheet of paper around and have everyone sign in. That takes no class time. If a student has poor attendance, his/her daily grade is normally affected by lowered quiz or homework scores, etc. You can also use attendance as a decision-making factor in assigning grades at the end of the semester for students with borderline grades.

Instructor Meetings

Instructor meetings are required for MTH 055 and MTH 105 instructors. MTH 105 instructor meetings will be held from 3:30 to 4:00 p.m. on Thursdays. Time will be determined for MTH 055 meetings. Do not schedule office hours or other activities during this half-hour. If a meeting is not necessary in a particular week, you will be notified. The intent of our weekly meeting is to share problems and concerns, to plan teaching strategies, and to make necessary decisions on specific issues that may arise during the week.

Other Responsibilities

You may be asked to help construct, proofread, or critique exams, and to conduct review sessions before exams. The supervisor will try to distribute these requests equally among the instructors.

Syllabus

Give your students a syllabus with pertinent information about your class. Information about how you will deal with grading should be included on this handout. Students should receive this on the first day of class. Make extra copies and give them to students who are added to your sections after the first week. At the end of this section is a sample of Linda Smoke's handout, which you may adapt to fit your needs. The University statement on students with disabilities (see last paragraph of this sample) must be copied verbatim and put on your handout.

End of Semester

At the end of each semester that you teach, you need to turn in a copy of your final grades, a copy of your grade records (grade book or spread sheet), and graded final exams to the graduate assistant supervisor for each class that you teach. Make sure to keep all grade records accessible in order to answer a student's questions about the final grade.

At the end of your contract you need to return all keys, textbooks, etc. as required by the department. Also leave your forwarding address and other contact information (telephone number, e-mail address, etc.) with the department secretary.

MTH 105 – SPRING 2007 (Sample Copy)

INSTRUCTOR: Mrs. Linda Smoke **OFFICE:** Pearce 201J **OFFICE PHONE:** (989)774-3295
e-mail: smoke1l@cmich.edu **DEPT. PHONE:** (989) 774-

3596

OFFICE HOURS: M 9:00 – 11:00 a.m.; W 1:00 – 3:00 p.m.; TR 8:30–9:20 a.m., 1:00–3:00 p.m. Others by appointment.

CLASS TIME/ROOM: TR 9:30–10:50 a.m. Pearce 137 CRN 33577

TEXT: Allen Angel: Intermediate Algebra for College Students; 6th ed.
Course Pack for Mth 105 (available at both bookstores)

CALCULATOR: A scientific calculator that handles exponents (x^y) will probably be fine. A capacity for entering **fractions** is strongly recommended. See me for details. Graphing calculators (TI-82, TI-83, etc.) are allowed but not required. TI-89 or TI-92 calculators are not allowed.

COURSE OUTLINE: See **Course Pack** for assignments and test schedule.

COURSE OBJECTIVES FOLLOW THE UNIVERSITY BULLETIN DESCRIPTION: The study of algebraic expressions, functions, factoring, graphing, linear and quadratic equations, linear inequalities, systems of linear equations, rational expressions, radicals, negative and rational exponents.

METHODOLOGY: Lecture. discussion and teacher directed activities.

ATTENDANCE: Regular attendance is important to success in this class. If for some reason you are unable to attend class, it is your responsibility to read through the material presented during your absence and to do the homework assigned.

DAILY WORK GRADE: The daily work grade is worth 150 points. These points will come from homework assignments and in-class quizzes. **There will be no make-up quizzes unless you are attending a university sponsored event.** The quizzes/ homework assignments will be worth 15 points each. There will be 12 of these during the semester. I will drop your two lowest scores. Quizzes will generally be on Thursdays.

GRADES: There are a total of 600 points in this class. The daily work grade is worth 150 points. There are three exams worth 100 points each, and the final exam which is worth 150 points. **Grades will be assigned as described in Course Pack. Final letter grades with +/- will be determined at the end of the semester.**

Final Exam: Tuesday, May 2, 2006 from 10:00 – 11:50 a.m.

CMU provides students with disabilities reasonable accommodation to participate in educational programs, activities or services. Students with disabilities requiring accommodation to participate in class activities or meet course requirements

should first register with the office of Student Disability Services (120 Park Library, telephone #989-774-3018, TDD #2568), and then contact me as soon as possible.

Additional Remarks and Helpful Suggestions

The supervisor of the Graduate Teaching Assistants will try to observe each of you once or twice during the semester. You will be given written comments for your use, with suggestions on teaching style, hints, preparation, and general improvement. These visits will not start until the fourth week or so of the semester, and it will not necessarily be before the first test, so if you have questions sooner, do not hesitate to contact the supervisor. Newer instructors will be observed first. You will not be given advance notice unless you notify the supervisor that you prefer knowing when he/she is planning to visit your classroom. If the supervisor's schedule makes it impossible for him/her to see you teach, then another professor may observe your teaching.

Dress appropriately on the days that you teach a class. Students do notice and appreciate good taste. You should be dressed at a level higher than the typical student. Your common sense should dictate your attire.

Make an effort to learn your students' names as soon as possible. This is useful in so many ways, and the students notice and appreciate a teacher who knows them by name. It will help in maintaining good attendance and class order because they will realize you notice when they are absent (or inattentive). Make a seating chart or pass an attendance sheet around each day, then glance at it while you are lecturing and use the students' names as you teach. Hand back quizzes and tests individually to each student if you have time, and look at their faces when you do this. It will help you connect names with faces. You should recognize each of your students' names by the end of the second or third week of class, even if you can not connect the name and the face yet. You should know, for example, when you are grading a test, that a particular student is not yours, and you have an exam that belongs to another instructor by mistake. Learning students' names will pay big dividends!

Discipline Problems—Student Code of Conduct

The University Bulletin Appendix 1, article 3.2.3 and 3.2.4, gives support for an instructor to remove a disruptive student from class. You should be aware that these statements exist and that you have the right to use them if necessary. Hopefully, this will not be an issue.

If you use a hand-written grade book, you may not want to write students' names in it until after the drop-back period has ended (about the second week of classes). Keep their daily work grades written on your class list until then. Using a spreadsheet for grades lends efficiency to your record keeping, as you can put in late additions or changes at any time. You must keep a hard copy backup of your spreadsheet grades! Write the grades in pencil or pen and then transfer them to the spreadsheet. If you simply enter grades from the student's paper to the computer, there will be no way to check if you entered a grade incorrectly. Use a separate cell for each quiz or homework score, labeled Quiz #1, Quiz #2, etc. In other words, we need scores itemized individually, not just a running total of

quiz or homework points. You must be able to document any and every grade that you give.

In planning your presentation of the material for MTH 055 or MTH 105, look at the Course Packet and text assignments first to see exactly what is to be covered. Sometimes not everything in a section is covered and you do not want to use valuable class time discussing something for which the student is not going to be responsible. Do the homework problems (or at least the harder ones) to see how involved your lecture will have to be to cover everything adequately. In MTH 055 and 105 we need to emphasize the basics, and not overkill on the real complicated problems.

Classrooms

You will be teaching in either Moore Hall or Pearce Hall. Classrooms that we use in Pearce Hall and Moore Hall are equipped with visualizers. If you are not familiar with this equipment, we will arrange for someone to demonstrate what is possible and how to use the equipment. You will need a code to operate these machines. Visualizer codes are different in every building. You will be given the code(s) for the building(s) you teach in.

What to Do if You Finish Your Lecture Early

The usual situation is that we never seem to have enough time to get through all the material in MTH 055/105. If you are consistently getting done with your classes more than five minutes early, you are going too fast. Most of your students are lost, even though they may not tell you. They may not even realize that they are lost until the exam, when it is too late. Be sure to allow time for students to ask questions about homework or quiz problems, or about material you are presenting in a lecture.

Ask your students questions! Questions do not have to be fancy! Some sample questions you could ask your students might include:

- Who did this problem a different way? What was your way?
- Which solution to this problem is easier to understand, mine or Student X's? Why?
- What homework problems did you have trouble with? (You may not have time to go through many of them in class, but at least you will know what problems you are going to be seeing in office hours!)
- Is there some rule or formula that we need for this problem? Tell me the name, if you can not remember exactly what it says.
- We just subtracted five from both sides of this equation. Can somebody please tell me what we should do next? Can someone explain why we did that?

If you are allowing plenty of time for questions and you still have time left over, try these suggestions:

- Give students some review problems over a topic covered earlier in the week. Let them work in groups while you walk around and answer questions.
- Give a quiz (real or practice—have it made up in advance, or pull problems out of the book).
- Do some review word problems—these are always confusing for these students.

- As a last resort, start some new material, particularly if the topic you are covering seems easy for your students and you know something hard is coming up. (Note: word problems and graphing are always hard for 055/105 students).

Grading Hints

Keep your quizzes short. Use two or three problems. If you do not like making up quiz problems, use homework problems—it encourages students to do homework. Short, frequent quizzes are more helpful for feedback than long, infrequent ones. They are easier to make and to grade and they do not take as much class time.

When you collect homework, grade two or three problems per assignment. Circle or check off the problems you have graded so your students know which ones you looked at.

You may want to give a homework quiz. Ask your students to put away their books and get out their homework from the previous day or two, and then just have them copy verbatim one or two problems and hand them in. This way you are grading whether or not they attempted the problems. It only takes a few minutes at the end of a period, and you can see if they are keeping up. You might give partial credit for work, even if the answer is incorrect.

Promptness in Grading

It is a courtesy to your students to get their quizzes, homework papers and exams graded as soon as possible, ideally by the next time that section meets. This is particularly important on the first test, when students with scores below 70% will be thinking seriously about dropping the class and may wish to come in for advice on what to do.

Tutoring Opportunities (Student Support Services)

Mathematics Assistance Center is located at 002 Troutman (Towers Basement). Free walk-in tutoring is available. The Mathematics Assistance Center is open Monday – Thursday from 9:00 a.m. to 9:00 p.m., Friday from 10:00 a.m. to noon, and Sunday from 5:00 p.m. to 9:00 p.m. Tutoring will begin on September 4 and will run through the last week of classes. The Center is not open during final week. The goal of the Math Center is to give students additional help and explanations for math concepts being taught in their courses. Tutors **should not** do homework assignment for students; they **should not** substitute as a student’s instructor when the student has missed class and they **should not** do problems on take home quizzes.

CD and Online Tutorial: Starting Fall semester 2007 each NEW textbook includes a tutorial CD and the online MathXL student access code card at no additional charge. The **Pass the Test CD** in the back of the text offers interactive versions of the “Key Terms” and “Test Your Word Power” from each chapter, summary lectures for each concept from the QuickReview, and video footage of an instructor working through the complete solution for every exercise from the chapter tests. On the **MathXL website** students can work through unlimited tutorial exercises correlated to the exercises in the text, and receive a personalized study plan to diagnose areas they need to practice. Students with used books may purchase the CD separately online with credit card for about \$20 from

www.MyPearsonStore.com (free shipping). Students with used books who wish access to the website may purchase access for about \$35 for a 12-month subscription. Go to www.MathXL.com and click on “Buy Now.”

Review Sessions will be held before each MTH 105 exam. These are in addition to any review you may have time for in class. They will generally be held in the evening a day or two before the test. Some of you will be asked to run a review session. Encourage your students to attend these sessions. We try to accommodate the wishes of the students as far as days/times. Be sure to hand out the exam information sheets, which you will be given before each test. MTH 055 instructors will review in class and may schedule out-of-class reviews at their discretion.

Paid Individual Tutors are available; a list of names is kept in PE 214. Students arrange this on their own. If you are interested in putting your name on a list to be a paid tutor, please see the secretary in PE 214 as soon as possible. GTAs may not tutor a course that they are presently teaching.

Other Guidelines

University Mathematics Competency

The University has a competency requirement for Mathematics. The competency requirement is the minimum mathematics required for a student to graduate with a bachelor's degree from Central Michigan University. This is outlined in the MTH 055 and 105 Course Packs and is available from the department office. Also, there is a section in the Undergraduate Bulletin dealing with competency.

Adding (Bumping), Withdrawing, and Dropping a Class

The policy on dropping back into a lower level course is as follows: For approximately the first two weeks of the semester, a student may decide they have been placed too high (or too low). If they wish to drop back into either MTH 055 or 105 from a higher course, they will be allowed to do this by coming to PE 201J to get a class change card. Announce this drop back policy every class period for the first two weeks of class. If a student wants to drop back, remind them of the competency requirement. If a student feels they are placed too low, we can adjust their schedule during the drop and add period. After this time, it will be necessary for the student to go to the department office to get a bump card.

Students who are not on your class list who want to add (bump into) your class cannot get a bump card from you. They must get a bump card from the person designated to hand out these cards. There will be a sign posted outside PE 214 with each course listed, the person's name doing the bumping for that class, his/her office number and office hours. For MTH 055/105 that person is Linda Smoke.

You will be getting some late additions to your class: drop backs from classes like

MTH 107, MTH 106, and MTH 217. Be sure to ask these students if they got a bump card (Drop/Add card), so they end up on your grade sheet at the end of the semester!

The last day for students to drop back to a lower level class is about two weeks after the start of classes. You will be getting a memo with the actual date. These students will be taking the first exam at the regularly scheduled time—they are NOT eligible for a make-up on Exam #1 unless they have some other problem, like illness. You will need to come up with your own policy for how you will handle make-up work (quizzes, etc) for these students on their daily work grade.

The last day to withdraw from a course occurs at the tenth week of the semester. Students will need to get your signature on a withdrawal card to get out of your class. Do not send them to Linda Smoke to get withdrawal cards signed. Withdrawal cards are available from the Registrar, and it is the student's responsibility to pick them up and turn them in to the Registrar, either in Warriner Hall or the Student Service Court (lower level of the University Center). You will get an e-mail message from the department office saying that the department secretary will sign a withdrawal card on the last day to withdraw if the student cannot find you. If you do not wish to have the department secretary sign a withdraw card on your behalf, you must inform the department.

Note: The terms “withdrawing” and “dropping” are used loosely by many people, but “dropping” a class implies that the student will get a refund of money; “withdrawing” does not. Dropping a class only occurs during the first week's “Drop and Add” period.

Class Lists

You will access your class lists by going to the following address:

<https://portal.cmich.edu/academics>. You will probably have 35-40 students in each of your classes. You should compare your attendance sheets to your class lists to determine any inconsistencies. Check the online class list frequently during the first few weeks, because it will be updated regularly by the registrar. Once you have the official class list, compare it with your sign-in attendance sheets and make note of any student who is on your list but who has never attended.

No-Show Card (Report of Non-Attendance)

As previously mentioned, you must take attendance each day. At the end of the third week of class, you should turn in a No-Show card for students who have never attended your class. These cards are in the main office, PE 214; they are filed under #18 (Non-Attendance Form) in the “Department Forms” cabinet. The form can also be downloaded from the Registrar home page: www.registrars.cmich.edu/deptforms/default.htm. There is also a place on the Non-Attendance Report form where you can report that a student has quit coming to class. You can submit this report to the Registrar at any time during the semester before the final date to withdraw from a class (tenth week). Also check to see if you have students attending your class who are not on your lists. They might be attending the wrong section and we need to get them into the correct section.

Student Opinion Surveys

At the end of each semester you are required to administer course evaluations. These student evaluations are on record in the department office and also at Park Library. Part of the student evaluation includes written comments that are often helpful in improving your teaching.

Grade Reports

Final semester grades are submitted to the Registrar's Office online. You will receive instructions from the Registrar as to how to complete the necessary forms. For those teaching MTH 055 or MTH 105, you will be given explicit instructions for computing your final grades. You must follow the department and course guidelines for assigning grades. It is patently unfair and unprofessional to give a student a grade that is higher or lower than he/she earned, whether this was done intentionally or unintentionally

Giving an Incomplete (I) Grade

The CMU policy on giving a student an "I" grade is outlined under Academic Information in the Bulletin. An "I" should be given only when a student has completed with satisfactory grades (usually interpreted as C-, but some will give it to anyone who is passing) the major portion of the course requirements (usually 70% of the work), and has convinced the instructor of his/her ability to complete the remaining work without re-registering for the course. It is not to be given to a student doing failing work. It is used when a student, because of illness or other justifiable circumstances, cannot complete the work within the framework of the semester schedule. The instructor must give the department a formal statement of the requirements left to complete the course and how this is to be done; you must also give the deadline (date) by which the student must complete the work. Both the instructor and the chairperson must sign the form and a copy must be given to the student. (If this is for a MTH 055 or 105 class, a copy is also given to Linda Smoke). This is not an easy grade to give, and although students will pressure you for an "I" rather than an "E" or a "W", you must hold firm to the University and Department guidelines. These forms are available in the "Department Forms" cabinet under #34 (Report of Incomplete Form). You can also download the form from the Registrar's page: www.registrars.cmich.edu/deptforms/default.htm.

Department Office Notes

Office Hours, Address, and Phone

At the beginning of each semester the department office will e-mail you requesting the times of your office hours, your current home address, your home phone number, and your e-mail address. Please provide this information by the time requested so that the office can compile a listing of all department members.

A department list with names, office numbers, e-mail addresses, and office hours will be posted outside the department office door. A copy will also be kept inside the office for telephone inquiries as well as a copy given to every department member for reference. A second list of department members indicating their home addresses and home phone numbers will also be distributed. If you wish to keep your home address and/or home phone number confidential, the information will still need to be kept on file in the department office. Please notify the Mathematics Department Office and the Registrar's Office immediately of any change in your home phone number or home address.

Emergency Sheets

Emergency sheets will be distributed at the beginning of the Fall semester. Please check to be sure that the information is complete and accurate. This information will be kept on file with the University in case of emergency. Some of the information (address, phone, e-mail) may be placed in the University Phone Directory.

Keys

Every GTA will receive the following keys:

- a key to your office – this will also open an outside door to Pearce Hall
- a key numbered 118 – this opens PE 215 (the workroom), PE 216 (the reading room), PE 201 (main hallway door to PE 201F), PE 201F (where the printer is located), PE 401 and PE 422 (computer labs)

These keys will be distributed at the Fall department GA orientation meeting by the dept secretary. Please contact Maryann in PE 213 if you have other questions.

Mailboxes

Every GTA will have a mailbox in the workroom (PE 215). Please empty your mailboxes on a regular basis. Because you may be sharing a mailbox with other GTAs, please make sure the mail is yours before you open it or take it with you. Also be sure to check your mailbox for daily notes about teaching your classes. Check your e-mail daily for department memos.

Copy Machine

Every GTA will be issued a code to use on the copy machines. You will receive an e-mail message containing your copier code by the first day of the week before classes begin. Prior to using the copy machines, please ask one of the department secretaries to give you a brief explanation of how the copiers work. The machines are to be used for work-related projects. If you need to make personal copies, please be sure to pay the department office 5¢ per page to cover costs. (A two-sided sheet counts as two copies.) Also, please do not run blank sheets of paper through the copier! The department is charged for all sheets run, blank or not. Use of colored paper is certainly acceptable. There are two kinds of transparency sheets available in PE 214. They are clearly marked for use in the copier or for other use. Please contact the secretary in PE 214 if you have any questions or problems.

It is important that you observe U.S. copyright laws. Do not put yourself or the Mathematics Department in legal jeopardy by making unauthorized copies of copyrighted material.

Supplies

The supplies in the workroom are there for work-related use only! Please take only what you need and return what you do not use. If you are in need of any supplies that you do not find in the workroom, or if you notice that any supplies are running low, please contact the secretary in PE 214.

Payroll

GTA's are paid bi-weekly, if you have direct deposit for your paycheck then you need to go to Portal. To view or print off your pay stub log into portal, go to finance, click on bi-weekly and submit, this should bring up your time sheet. To print you will want to click on Printable Version. If you receive a check it will be put in your mailbox in PE 215. If you do not have direct deposit we encourage you to have. If you have questions about your paycheck, see Donna Ahlers in PE 213.

Questions regarding the following should be directed to the secretary in PE 214, 774-3596.

- Student Opinion Survey Forms
- Adding an Independent Study Course for yourself with the permission of the professor
- Scheduling a classroom
- Supplies

Questions regarding the following should be directed to Donna Ahlers in PE 213, 774-3597.

- Keys/Rooms
- Payroll
- Copy codes
- Expense Reimbursements

Questions regarding the following can be directed to any secretary.

- Copy machine problems
- Address changes
- Forms

Custodian Issues

If there is a mess in any room that needs to be cleaned up, please call 6548 or 6547 (switchboard). Normal hours for the custodian are from 8:00 a.m. to 11:00 p.m. Let them know what type of mess it is, and where it can be located (building and room number) If it is any kind of body fluid (blood, vomit), let the switchboard know so that they can tell the custodian. The custodian will bring a kit and bio-bag. They will then page Mary (our daytime custodian) or another custodian.

Monday-Friday	4:00 a.m. - 12:30 p.m.
Sunday-Thursday	10:30 p.m. - 7:00 a.m.

After hours please call 3081 (DPS). They will radio out for a swing custodian. In an emergency call 3081 (DPS) or 911 which will be DPS (Department of Public Safety).

Office Etiquette and Professionalism

Most of you will share PE 202 or PE 103 for your office space. You are assigned a desk and at least two drawers of a filing cabinet. You are in close proximity to your fellow grad students and you must respect each other's space. Please keep your area clean and organized; do not leave food or trash lying on the floor or your desktop. The impression students and other visitors get from this office may reflect on the department as a whole. Custodians will not be able to clean these offices effectively if there is too much litter on the floor. Thanks for your cooperation.

Teaching Professionalism

It is imperative that you are familiar with and that you follow the guidelines published by the Office of Affirmative Action regarding sexual harassment. Specifically, you risk termination of your graduate assistantship if you are deemed guilty of any form of sexual harassment against a student, a peer, or a faculty member. This is a very serious issue, and you will be given more information in verbal presentations and in written form.

Appendix:

Central Michigan University

Department of Mathematics
Application for Graduate Courses by Independent Study

Instructions to Students

1. You are required to complete this form only if you plan to satisfy a course requirement in your degree program by independent study. This form is NOT required for independent study courses MTH 497, 697, 797 and STA 597.
2. You are required to obtain the signatures of the faculty supervisor for the independent study class, of your academic advisor, and of your graduate coordinator. You must submit this form to the department office no later than the drop/add period of the semester during which the independent study will take place.

Name _____ **Student ID Number** _____

Course Number _____ **Semester/Year** _____

Faculty Supervisor for Independent Study _____

Academic Advisor _____

Give a Brief rationale for taking this course by independent study. You must address the following:

- (i) When was the course offered the previous time? If you did not take the course at that time, explain why.
- (ii) Explain why you are unable to take the class at the next scheduled offering.

Student Signature _____ **Date** _____

By signing below the faculty member agrees to give the course by independent study

Faculty Supervisor _____ **Date** _____

By signing below the academic advisor agrees with the student's rationale for taking this course by independent study

Academic Advisor _____ **Date** _____

By signing below the Graduate Coordinator approves the student's request. The Graduate Coordinator may seek the advice of the Graduate Committee before making a decision on the student's request.

Graduate Coordinator _____ **Date** _____

CENTRAL MICHIGAN UNIVERSITY

Department of Mathematics
Application for Internship in the Ph.D. Program

NAME _____ Student ID NO. _____

GRADUATE FACULTY SUPERVISOR (*)

- State the course number and title for which you are applying to teach.

—
- Give a brief rationale describing why you wish to teach the course.
- State your qualifications for teaching the proposed course. This may include items such as coursework taken at the graduate level or experiences taken from industry or other practical settings.
- If this is your second internship, attach a summary describing your first internship.

This statement affirms that I have read the internship internal document. Furthermore, I understand the requirements for the internship and have had the opportunity to receive any clarification.

Student Signature

Date

*A letter of support from the graduate faculty supervisor must accompany this application.

DEPARTMENT OF MATHEMATICS
CENTRAL MICHIGAN UNIVERISTY

Graduate Student Evaluation
Spring 2008

Name of Student: _____

Current appointment: _____

Fall 2007 assigned duties: _____

Spring 2008 assigned duties: _____

The following evaluation is based on the criteria found on the attached sheet, SOS scores, and comments from the faculty supervisors and members of the graduate committee.

Teaching performance

1. Preparation for and delivery of instruction: _____ Excellent/Satisfactory/Unsatisfactory

2. Communication with students: _____ Excellent/Satisfactory/Unsatisfactory

3. Other teaching related duties: _____ Excellent/Satisfactory/Unsatisfactory

ADDITIONAL COMMENTS FROM GRADUATE COMMITTEE ON TEACHING PERFORMANCE:

Progress in the degree program

4. Progress in course work: _____ Satisfactory/Unsatisfactory

5. Progress in Ph.D. Dissertation or _____ Satisfactory/Unsatisfactory
Master's Plan A/Plan B

6. Completion of Ph.D. qualifying examinations: _____ Satisfactory/Unsatisfactory

7. Completion of Ph.D. teaching internship: _____ Satisfactory/Unsatisfactory

ADDITIONAL COMMENTS FROM GRADUATE COMMITTEE ON PROGRESS IN THE DEGREE PROGRAM:

CENTRAL MICHIGAN UNIVERSITY

Department of Mathematics

MA Advisor Worksheet

2007-2008

A two-year plan must be submitted to the department in consultation with the student's advisor in the student's first semester.

Name: _____

Program: Master of Arts (MA)

Advisor: _____

<u>Course</u>	<u>Semester (tentative)</u>
A. <u>Analysis (9 hours):</u>	
MTH 533 (3) Advanced Calculus II	Sp 08, Sp 09
MTH 632 (3) Introduction to Real Analysis	Fall 07, Fall 09
MTH 636 (3) Introduction to Complex Variables	Fall 09
B. <u>Algebra (6 hours):</u>	
MTH 525 (3) Modern Algebra II	Fall 07, Fall 08
MTH 623 (3) The Theory of Groups	Sp 08, Sp 09

Each student is required to take one courses in each of the areas (C-E) below:

C. <u>Computational Mathematics (3 hours):</u>	
MTH 520 (3) Optimization Theory	Sp 08, Sp 09
CPS 530 (3) Simulation of Discrete Event Systems	Offered on demand
MTH 578 (3) Combinatorics I	Fall 07,
MTH 638 (3) Theoretical Numerical Analysis	Fall 07, Fall 09
D. <u>Statistics (3 hours):</u>	
Any statistics course offered by the mathematics department numbered STA 500 or higher.	
E. <u>Perspectives in Mathematics (3 hours):</u>	
MTH 671 (3) Introduction to the Axiomatic Method	
MTH 673 (3) History of Advanced Mathematics	Su II 08, Su II 09
MTH 694 (3) Practicum in Mathematics	Sp 08
F. <u>Research Requirements (6 credits):</u>	

Plan A (6 credits)

Completion of a thesis (MTH 798), including an oral examination over the thesis

OR

Plan B (6 credits)

1. MTH 693 (1) Graduate Seminar in Mathematics and its Applications
2. MTH 698 (1) for Plan B paper 1
3. MTH 698 (1) for Plan B paper 2
4. Electives (3 credits) may be chosen from among all graduate level mathematics, statistics, and computer science courses. A student may select up to three hours from a department other than mathematics or computer science. Electives must be chosen with the approval of the advisor.

Tentative Schedule

YEAR	Fall	Spring	Summer I	Summer II

Signatures

Student: _____

Date: _____

Advisor: _____

Date: _____

CENTRAL MICHIGAN UNIVERSITY
 Department of Mathematics
 PhD Advisor Worksheet
 2007-2008

A two-year plan must be submitted to the department in consultation with the student's advisor in the student's first semester and then at two-year intervals.

Name: _____

Program: Doctor of Philosophy (PhD)

Advisor: _____

<u>Course</u>		<u>Semester</u> (tentative)
A. <u>Algebra (9 hours):</u>		
MTH 525 (3) Modern Algebra II		Fall 07, Fall 08
MTH 623 (3) The Theory of Groups		Sp 08, Sp 09
MTH 625 (3) Theory of Associative Rings		Fall 07, Fall 08
B. <u>Analysis (12 hours):</u>		
MTH 533 (3) Advanced Calculus II		Sp 08, Sp 09
MTH 632 (3) Introduction to Real Analysis		Fall 07, Fall 09
MTH 636 (3) Introduction to Complex Variables		Fall 08
MTH 633 (3) Real Variables OR		Sp 08, Sp 09
MTH 637 (3) Complex Variable Theory		Sp 09
C. <u>Mathematics Education (6 hours):</u>		
MTH 761 (3) Methods for Teaching College Mathematics		Fall 08
MTH 762 (3) Research in Collegiate Mathematics Education		Sp 09

Each student is required to take two courses in each of the areas (D-G) below:

D. <u>Applied Mathematics (6 hours):</u>		
MTH 520 (3) Optimization Theory		Sp 08, Sp 09
MTH 586 (3) Operations Research I		Fall 08
MTH 634 (3) Fourier Analysis		Not offered
MTH 638 (3) Theoretical Numerical Analysis		Fall 09
E. <u>Combinatorics (6 hours):</u>		
MTH 578 (3) Combinatorics I		Fall 07, Fall 10
MTH 678 (3) Combinatorics II		Sp 09, Sp 10

F. Statistics (6 hours):

STA 580 (3) Applied Statistical Methods	Each Fall 07-09
STA 584 (3) Mathematical Statistics I	Each Fall 07-09
STA 684 (3) Theory of Statistical Inference	Sp 09

G. Topology and Foundations of Mathematics (6 hours):

MTH 641 (3) Topics in Geometry	Su II 09
MTH 645 (3) Topology	Fall 07, Fall 09
MTH 673 (3) History of Advanced Mathematics	Su II 08, Su 11 09

Electives (3-9) hours:

Area of Specialization (9-15 hours):

Dissertation MTH 898 (15 hours):

Qualifying Examinations:

1) Analysis	1 st attempt: _____	P/F: _____	2 nd attempt: _____	P/F: _____
2) Algebra	1 st attempt: _____	P/F: _____	2 nd attempt: _____	P/F: _____
3) _____	1 st attempt: _____	P/F: _____	2 nd attempt: _____	P/F: _____

Internship MTH 766 (6 hours): (May not be taken until all qualifying examinations have been passed)

1) Course: _____ Supervisor: _____ Semester: _____

2) Course: _____ Supervisor: _____ Semester: _____

Credit Requirements: A student must earn at least 90 semester hours of graduate work (50 at the 600 level or above) beyond the bachelor's degree or 60 semester hours of graduate work (35 at the 600 level or above) beyond the master's degree. At least 15 of the last 30 must be earned at the 700 level or above, *excluding* dissertation and internship credits.

Tentative Schedule

Academic year	Fall	Spring	Summer I	Summer II

Signatures

Student: _____

Date: _____

Advisor: _____

Date: _____