

Department of Biomedical & Health Informatics

Student Handbook

*Master of Science in Bioinformatics &
Graduate Certificate in Clinical Research*

2013-14

University of Missouri-Kansas City // School of Medicine // Located at the Center for Behavioral Medicine
1000 East 24th Street, 5th Floor // Kansas City, Missouri 64108 // Phone: 816-235-1184 // Fax: 816-283-8563

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INTRODUCTION

This handbook contains helpful information about the Master of Science in Bioinformatics Degree program and Graduate Certificate in Clinical Research Program. It includes a description of program requirements, policies on progression, and academic and professional guidelines. More information is available from the Graduate School catalog, which is available on the UMKC webpage (<http://sgs.umkc.edu/>), and in the UMKC General catalog, available from the University Information Center by presenting your student identification card or at <http://www.umkc.edu/catalog/>.

Students are responsible for knowing and complying with the program and University policies, procedures, and deadlines. From time to time, the program and University policies may change, so the information in this edition of the handbook may become outdated. The updated version is maintained by the Department of Biomedical and Health Informatics (DBHI). As some aspects may undergo further revision, you are encouraged to obtain updated versions by visiting <http://www.med.umkc.edu/msb/>.

The contributions of students, faculty and staff to make this handbook more useful are greatly appreciated. When questions arise, please contact the department directly by phone (816) 235-1184 or email: tufts@umkc.edu.



Karen B. Williams, Ph.D.

Chair & Professor

Department of Biomedical & Health Informatics

School of Medicine

WilliamsK@umkc.edu

Helpful Contacts at the School of Medicine

Marge Weimer
Education Coordinator (Resource Adviser)
Student Affairs
School of Medicine
WeimerM@umkc.edu
(816) 235-1963

Scott Sponholtz
Assistant Director - Hospital Hill
Financial Aid and Scholarships Office
School of Medicine
SponholtzS@umkc.edu
(816) 235-6782

MASTER OF SCIENCE IN BOINFORMATICS PROGRAM DESCRIPTION

The Department of Biomedical and Health Informatics (DBHI) at the School of Medicine (SOM), in cooperation with the School of Biological Sciences (SBS) and the School of Computing and Engineering (SCE), offers the Master of Science in Bioinformatics (MSB) with emphasis areas in Clinical Research, Computational Bioinformatics, and Genomic Bioinformatics.

- **Clinical Research:** Emphasizes the creation and understanding of data generated by patient care and clinical studies and on the statistical methodology needed for clinical research and improved bedside care. (Additional information regarding this area is available. Please visit <http://www.med.umkc.edu/msb/clinical.shtml>).
- **Computational Bioinformatics:** Emphasizes the development and use of the next generation of bioinformatics tools and software. (Additional information regarding this area is available. Please visit <http://sce.umkc.edu/csee/programs/graduate.aspx>).
- **Genomic Bioinformatics:** Emphasizes the use of existing software for biological analysis and the analysis of a diverse set of biological data. (Additional information regarding this area is available. Please visit http://www.umkc.edu/catalog/School_of_Biological_Sciences_0.html).

The program is designed to prepare a new generation of informatics professionals who will have the necessary skills to work constructively for the advancement of health sciences. Students will master core competencies that will allow them to participate in biological research, clinical and population health research, and research to develop innovative information systems. Our goal is to produce the next generation of health researchers by emphasizing patient-oriented research in the context of state-of-the-art medical informatics.

Graduates are expected to be effective team members who can contribute to multidisciplinary approaches to education, research, and development in the fields of bioinformatics and/or clinical research. This program will prepare students to assume responsible positions, which may include informatics support for basic and translational research and development, institutional management, public policy, information systems, hospitals or industry development or as members of a clinical research team. Alternatively, students completing their Master's degree may choose to continue their education at advanced graduate levels.

Student Learning Outcomes

- Demonstrate lifelong learning skills by continually setting learning goals, pursuing them, and applying the knowledge to his or her profession.
- Recognize and use bioinformatic factors/data to influence health, disease, disability, and access to care.
- Establish productive collaborations with academia, industry, and government agencies.
- Communicate effectively with diverse groups of professionals.
- Demonstrate commitment to the principles of responsible research: honesty, efficiency, accuracy, and objectivity.

Curricular Description

A minimum of 36 credit hours are required to earn the Master of Science in Bioinformatics degree in one of the three emphasis areas and include:

- 12 credit hours of core courses (MEDB 5501, MEDB 5502, MEDB 5510 and 3 hours in the SGS 5550 series)

- Required coursework in the respective emphasis areas
- Electives
- Thesis or Capstone Project

In addition to the Core requirements of all students in the program, each student will have requirements that vary by emphasis area. The suggested course sequencing is as follows:

		Clinical Research	Computational	Genomics
Year 1	Fall (AUG-DEC)	Biostatistics 1 (MEDB 5501)	Biostatistics I (MEDB 5501)	Biostatistics I (MEDB 5501)
		Clinical Research Methodology (MEDB 5510)	Database Management/Design* (COMP-SCI 470 or 371)	Biochemistry I (LS-MBB 5561)
		Elective	Introduction to Bioinformatics (COMP-SCI 5566)	Cell and Molecular Biology I (LS-CBB 5530)
	Spring (JAN-MAY)	Biostatistics II (MEDB 5502)	Biostatistics II (MEDB 5502)	Biostatistics II (MEDB 5502)
		Medical Informatics (MEDB 5520)	Medical Informatics (MEDB 5520)	Biochemistry II (LS-MBB 5562)
		Clinical Trials (MEDB 5512)	Machine Learning in Bioinformatics (COMP-SCI 5567)	Cell and Molecular Biology II (LS-MBB 5520)
		Overview of Health Services Research (MEDB 5513)	Elective	Thesis (3) (LS-MBB/CBB 5690)
Year 2	Fall (AUG-DEC)	Responsible Conduct of Research (SGS 5550 A, B, C)	Responsible Conduct of Research (SGS 5550 A, B, C)	Responsible Conduct of Research (SGS 5550 A, B, C)
		Clinical Epidemiology (MEDB 5511)	Clinical Research Methodology (MEDB 5510)	Clinical Research Methodology (MEDB 5510)
		Elective	Elective	Evolution (BIOL 5559)
	Spring (JAN-MAY)	Thesis (6) OR Elective (3) + Project (3)	Thesis (6) OR Elective (3) + Project (3)	Database Management/Design* (COMP-SCI 470 or 371)
		*Unless a student has already completed one of these courses		Bioinformatics and Data Analysis (BIOL 5525)
				Thesis (3) (LS-MBB/CBB 5690)

Elective Credits

In addition to the required courses listed above, students will work with their Graduate Adviser to determine appropriate electives. Suggestions are listed below, but this list is not exhaustive. The number of elective credit hours will vary depending on the emphasis area selected and whether or not the student will complete a thesis or capstone project. Depending on the extent of prior preparation, some of the electives might entail additional pre-requisite coursework.

Clinical Research Emphasis

- Qualitative Methods In Nursing Research (NURSE 5557)
- Qualitative Research Methods (NURSE 5670)
- Project Management (DSOM 5543)
- Human Genome Epidemiology (MEDB 5514/ LS-BIOC 5530)

Computational Emphasis

- Advanced Software Engineering (CS 5551)
- Knowledge Discovery & Management (CS 5560)
- Foundations of Computational Intelligence (CS 5590CI)
- Neural and Adaptive Systems (ECE 5590NN)
- Advanced Biomedical Signal Processing (ECE 5590BP)
- Biomedical Image Processing (ECE 5590B)
- Pattern Recognition (ECE 5590PR)
- Design and Analysis of Algorithms (CS 5592)
- Architecture of Database Management Systems (CS 570)
- Large Scale XML Data Management (CS 5590LD)
- Clinical Epidemiology (MEDB 5511)
- Evolution (BIO L5519)
- Bioinformatics and Data Analysis (BIO L5525)

Genomics Emphasis

- Mammalian Physiology (BIOL 5534)
- Neurobiology (BIOL 5542)
- Graduate Biophysical Principles (LSCBB 5501)
- Graduate Virology (LSCBB 5504)
- Membrane Biochemistry and Biophysics (LSCBB 5566)
- Developmental Biology (LSMBB 5509)
- Structure and Function of Proteins (LSMBB 5565)

POLICY ON PROGRESSION FOR THE MSB DEGREE PROGRAM

Preface

The Curriculum and Student Progression Committee (CSPC) will develop and apply policies and procedures that govern student progression. They will make recommendations regarding student progress to the SOM Graduate Council who will, in turn make recommendations to the dean of the SOM. Recommendations made by the CSPC are designed to ensure the positive progression of students who clearly demonstrate additive knowledge, skills, and abilities resulting in evidence-based competencies consistent with the student's level of training and professional scope of practice expectations. The CSPC also has the responsibility of recommending non-promotion and academic probation when a student fails to meet MSB Program Requirements.

Statement of Human Rights

The Board of Curators and UMKC are committed to the policy of equal opportunity, regardless of race, color, religion, sex, sexual orientation, national origin, age, disability and status as a Vietnam era veteran. The Equal Opportunity and Affirmative Action Office, 223 Administrative Center, 5115 Oak St., is responsible for all relevant programs.

Committee Structure and Membership

The Department has a standing Curriculum and Student Progression Committee. This committee must have at least two regular faculty members, with the Department Chair serving as an *ex officio* member.

Curriculum and Student Progression Committee: The members of this committee will be elected at a Faculty meeting and shall consist of at least three faculty members and one student advisory member (non-voting). Committee member terms are two years. Members may be re-elected. All curriculum and student progression matters passed by the Committee must be approved by a majority vote of the entire Faculty. The major responsibilities of the Curriculum and Student Progression Committee will be:

1. To develop and monitor new and existing courses and/or graduate programs, and
2. To formulate and administer procedures regarding student admissions, assessment, graduation, dismissal, and discipline for departmental programs.

Degree Requirements

To earn the Master of Science Bioinformatics, the student must satisfy both the general Master of Science degree requirements of the University of Missouri-Kansas City and the requirements of the Department of Biomedical and Health Informatics for either the thesis or non-thesis option as outlined on the next page.

Policy

Policies and procedures are drafted and adopted by the Committee that explicitly define criteria for remaining a student in good standing while enrolled in the MSB Program.

Criteria for Probation, Separation and Graduation

1. Probation

Graduate students, regardless of classification, must maintain a 3.0 (B) grade-point average in all coursework taken for graduate credit at UMKC and must meet any additional academic requirements imposed by the school, department or Interdisciplinary Ph.D. discipline. Students

are responsible for keeping apprised of their academic status by referring to term grades and their permanent academic record on file in the UMKC Registration and Records Office.

Whenever the cumulative GPA for UMKC courses taken for graduate credit by a graduate student of any classification falls below 3.0, the student's status for the next term becomes: "On Probation - See Graduate Adviser." (Interdisciplinary Ph.D. students will be directed to consult their interim adviser or research adviser.) The Graduate Adviser, interim adviser or research adviser will review the student's progress and provide counsel, and the following conditions apply:

- A graduate student on probation who is not restored to good academic standing by the end of two successive regular semesters following the term in which the cumulative GPA fell below 3.0 will be declared ineligible to re-enroll.
- While on probation, a graduate student must achieve a 3.0 term GPA in order to enroll for the following term.
- A graduate student on probation will not be restored to good standing until a cumulative graduate-credit GPA of at least 3.0 is achieved.

2. Separation

When DBHI, SOM, or the MS Graduate Committee, irrespective of a student's grade-point average, considers a graduate student's performance to be unsatisfactory, the department, school or committee may recommend to the SOM Graduate Council that the student be reclassified or declared ineligible for further study. The SOM Graduate Council will make recommendations to the dean of the SOM who will convey a decision to the Graduate Council and the department.

Students who have been declared ineligible due to unsatisfactory progress or performance may appeal such decisions to the dean of the School of Graduate Studies, as designee of the chancellor. Such appeals must be made in writing within 14 consecutive days after the student receives notice of the decision.

The decision of the graduate dean, as the chancellor's designated representative in such cases, is final and will be communicated in writing to the following:

- The Student
- The SOM Graduate Council
- The Dean of the SOM
- The Registrar

3. Graduation Requirements for the Thesis Option

- Complete a minimum of 36 hours of approved coursework for graduate credit with a cumulative GPA of at least 3.0.
- Complete a minimum of six hours in Research and Thesis (MEDB 5599, LSMBB/CBB 5690).
- Complete a minimum of nine hours in the emphasis area.
- Meet with his/her Graduate Adviser to coordinate a Graduate Committee when the student has completed nine hours of graduate work.

- Present evidence of research capabilities in the form of a master's thesis. Pass a thesis defense that will cover all aspects of the research project undertaken for the thesis in the student's graduate program.
- Satisfy all common requirements.

Graduation Requirements for the Non-Thesis Option:

- Complete a minimum of 36 hours of approved coursework for graduate credit with a cumulative GPA of at least 3.0.
- Complete a minimum of 12 hours in the emphasis area.
- Create a program of study form with the Graduate Adviser during the first semester of course work, which will be updated every semester.
- Satisfy all common requirements.

Graduation Common Requirements and Limitations for Both Options:

- Satisfy the core requirements for the program and emphasis area.
- Develop an approved program of study before the end of the semester in which the student completes 12 credit hours of graduate work.
- No more than six credit hours of course work completed outside of the Department of Biomedical and Health Informatics may be transferred to satisfy degree requirements.
- No more than six credit hours of independent study may be used to satisfy degree requirements. All MEDB 5530 or MEDB 5531 courses to be applied to the Master of Science degree requirements must be approved by the Graduate Adviser before classes begin.
- No more than one course grade below 3.0 may be applied toward the degree requirements.

Transfer Credit

Not more than six hours of graduate credit may be transferred from another recognized graduate school or from another academic unit within UMKC. Transfer credit may be applied toward the master's degree requirements on the approval of the student's Graduate Adviser and the Graduate Committee. No credit hours may be transferred when those hours have been used toward the completion of any other degree program, graduate or undergraduate. The total amount of transfer credit and credit from approved 400-level classes, combined, shall not exceed nine hours.

4. Procedure for Review of Progress

- Students should initiate meetings once a semester to review progress with their Graduate Adviser.
- One week after final grades are submitted for the semester, a representative from the department will update official copies of the Program of Study form.
- Forms will be presented to the Committee for review two weeks after final grades are submitted each semester.
- The Committee will make recommendations for academic probation, progression, and graduation.
- Students who have not met progression standards will be notified in writing of academic probation, and will have the opportunity to meet with the Committee to present information on their status in the program as needed.

Withdrawal from the MSB Program

A student withdrawing from the SOM MSB Program must submit a letter of withdrawal (with rationale influencing the decision) to the MSB Curriculum and Student Progression Committee and meet with the Chair of the Department or the Graduate Adviser. Verbal notification of intent to withdraw is not considered official notification.

GRADUATE CERTIFICATE IN CLINICAL RESEARCH PROGRAM DESCRIPTION

The Department also offers a Graduate Certificate in Clinical Research. The Graduate Certificate is a valuable credential for health care professionals (e.g., junior faculty, clinical fellows, physicians, nurses, pharmacists, dentists, clinical research coordinators, and other allied health professionals) who want in-depth exposure to essential tools needed to advance their research career but who are unable to devote the requisite time to a full master's degree program.

Specific Requirements for the Graduate Certificate in Clinical Research

Complete the five core courses (a minimum of 15 hours) of approved coursework for graduate credit with a cumulative GPA of at least 3.0. Core courses are:

- Biostatistics I (MEDB 5501)
- Clinical Research Methodology (MEDB 5510)
- Clinical Epidemiology (MEDB 5511)
- Clinical Trials (MEDB 5512)
- Overview of Health Services Research (MEDB 5513)

Since the Graduate Certificate Program includes the core courses required to complete the full MSB degree, Certificate Program graduates will be offered the option of applying to the MSB program in the Clinical Research emphasis. If accepted, they will be able to apply the 15 credit hours towards fulfilling the requirements for the MSB degree (36 credit hours).

Transfer Credit

Not more than six hours of graduate credit may be transferred from another recognized graduate school or from another academic unit within UMKC. Transfer credit may be applied toward the Graduate Certificate requirements on the approval of the student's Graduate Adviser and the Curriculum and Student Progression Committee. No credit hours may be transferred when those hours have been used toward the completion of any other degree program, graduate or undergraduate. The total amount of transfer credit and credit from approved 400-level classes, combined, shall not exceed nine hours.

POLICY ON PROGRESSION FOR THE GRADUATE CERTIFICATE IN CLINICAL RESEARCH PROGRAM

Preface

The Curriculum and Student Progression Committee (CSPC) are responsible for developing and applying policies and procedures in order to make recommendations regarding MSB student progress to the School of Medicine (SOM) Graduate Council, which will make recommendations to the Dean of the SOM. Recommendations made by the CSPC are designed to ensure the positive progression of students who clearly demonstrate additive knowledge, skills, and abilities resulting in evidence-based competencies consistent with the student's level of training and professional scope of practice expectations. The CSPC also has the responsibility of recommending non-promotion and academic probation when a student fails to meet Graduate Certificate in Clinical Research Program Requirements.

Statement of Human Rights

The Board of Curators and UMKC are committed to the policy of equal opportunity, regardless of race, color, religion, sex, sexual orientation, national origin, age, disability and status as a Vietnam era veteran. The Equal Opportunity and Affirmative Action Office, 223 Administrative Center, 5115 Oak St., is responsible for all relevant programs.

Committee Structure and Membership

The Department has a standing Curriculum and Student Progression Committee. This committee must have at least two regular faculty members, with the Department Chair serving as an *ex officio* member.

Curriculum and Student Progression Committee. The members of this committee will be elected at a Faculty meeting and shall consist of at least three faculty members and one student advisory member (non-voting). Committee member terms are two years. Members may be re-elected. All curriculum and student progression matters passed by the Committee must be approved by a majority vote of the entire Faculty. The major responsibilities of the Curriculum and Student Progression Committee will be:

3. To develop and monitor new and existing courses and/or graduate programs, and
4. To formulate and administer procedures regarding student admissions, assessment, graduation, dismissal, and discipline for departmental programs.

Policy

Policies and procedures are drafted and adopted by the Committee that explicitly define criteria for maintaining a student in good standing while enrolled in the Graduate Certificate program.

Criteria for Probation, Separation and Graduation

1. Probation

Graduate students, regardless of classification, must maintain a 3.0 (B) grade-point average in all coursework taken for graduate credit at UMKC and must meet any additional academic requirements imposed by the school, department or Interdisciplinary Ph.D. discipline. Students are responsible for keeping apprised of their academic status by referring to term grades and their permanent academic record on file in the UMKC Registration and Records Office.

Whenever the cumulative GPA for UMKC courses taken for graduate credit by a graduate student of any classification falls below 3.0, the student's status for the next term becomes: "On Probation - See Graduate Adviser." (Interdisciplinary Ph.D. students will be directed to consult

their interim adviser or research adviser.) The principal graduate adviser, interim adviser or research adviser will review the student's progress and provide counsel, and the following conditions apply:

- A graduate student on probation who is not restored to good academic standing by the end of two successive regular semesters following the term in which the cumulative GPA fell below 3.0 will be declared ineligible to re-enroll.
- While on probation, a graduate student must achieve a 3.0 term GPA in order to enroll for the following term.
- A graduate student on probation will not be restored to good standing until a cumulative graduate-credit GPA of at least 3.0 is achieved.

2. Separation

When DBHI, SOM or M.S. supervisory committee, irrespective of a student's grade-point average, considers a graduate student's performance to be unsatisfactory, that department, school or committee may recommend to the SOM Graduate Council that the student be reclassified or declared ineligible for further study. The SOM Graduate Council will make recommendations to the Dean of the SOM who will convey a decision to the Graduate Council and DBHI.

Students who have been declared ineligible due to unsatisfactory progress or performance may appeal such decisions to the dean of the School of Graduate Studies, as designee of the chancellor. Such appeals must be made in writing within 14 consecutive days after the student receives notice of the decision.

The decision of the graduate dean, as the chancellor's designated representative in such cases, is final and will be communicated in writing to the following:

- The student
- The SOM Graduate Council
- The Dean of the SOM
- The registrar

3. Procedure for Review of Progress

- Students should initiate meetings once a semester to review progress with their Graduate Adviser.
- One week after final grades are submitted for the semester, a representative from the department will update official copies of the Program of Study form.
- Forms will be presented to the Committee for review two weeks after final grades are submitted each semester.
- The Committee will make recommendations for academic probation and progression.
- Students who have not met progression standards will be notified in writing of academic probation, and will have the opportunity to meet with the Committee to present information on their status in the program as needed.

Withdrawal from the Graduate Certificate Program

A student withdrawing from the SOM Graduate Certificate in Clinical Research Program must submit a letter of withdrawal (with rationale influencing the decision) to the Curriculum and Student Progression Committee and meet with the Chair of the Department or Graduate Adviser. Verbal notification of intent to withdraw is not considered official notification.

ACADEMIC AND PROFESSIONAL REGULATIONS FOR THE MSB & GRADUATE CERTIFICATE IN CLINICAL RESEARCH PROGRAMS

For smooth completion of the MSB degree program or the Graduate Certificate in Clinical Research, a student must follow various academic regulations as described below:

Program Philosophy

Consistent with the Program's philosophy to train graduates who upon graduation will be valued members of a life sciences workforce, didactic instruction is integrated with research and clinical activities from the beginning of student training. These experiences are graded in complexity and are designed to foster the development of cumulative knowledge and skill as the student progresses through the program.

Dress Code

Personal appearance, which includes hygiene, grooming and choices regarding jewelry and clothing, is a reflection of attitude towards oneself and the people one is likely to encounter.

- In addition to the students, faculty administrators and support staff whose workplace is the School of Medicine; there are important visitors to the school on a daily basis whose impressions of the school will be formed in part, by the appearance of those who represent the institution.
- There is a reasonable consensus within the School of Medicine family on the general guidelines for behavior regarding appearance. We generally agree that we should: be clean, minimize body odor, avoid being sexually provocative, and avoid the use of appearance as a way of attracting undue attention to oneself.
- Examples of unacceptable dress on which there is broad consensus (students and faculty) are as follows: clothing with emblems, slogans and symbols related to illicit substances, alcohol, tobacco products, obscene language or sexual connotations; micro-minis (more than three inches above the knee); crop tops, spaghetti strap tops or backless tank tops; bare feet; and cutoff shorts. On the other hand, neatly tailored shorts and sandals would be appropriate in most non-clinical, non-formal settings.
- Medicine, as a caring profession, would be expected to foster an attitude of concern for the well-being of individual members of the group and for the reputation of the group as a whole. When a person belonging to the institution displays behavior, including appearance, unbecoming of the profession of medicine, it would be incumbent on the other members of the institution to guide, counsel and/or assist the person demonstrating such behavior. Students, faculty, and staff will be expected to respond appropriately to constructive criticism.
- Teaching hospitals and research laboratories may have their own rules regarding appropriate dress for safety and specialized procedures. Please follow them without negotiation.

Starting the Program

When accepted into the program, the student's first contact is with an assigned Graduate Adviser. At the initial meeting, students will discuss plans for enrollment that first semester and create a tentative program of study based on the degree requirements.

The DBHI Curriculum and Student Progression Committee will handle procedural issues related to the MSB and Graduate Certificate programs. Any request for exceptions to rules, regulations or policies should be directed to this committee.

Good practices in Graduate Education for students are outlined by the School of Graduate Studies and available at: <http://sgs.umkc.edu/practice/index.asp>. Students are encouraged to review these guidelines.

Deficiencies

The Admissions Committee (AC) reviews and evaluates all applications for admissions to the DBHI degree programs. Frequently, they review applications from students whose past academic record showed strong positive indications for success as a graduate student, yet have not satisfied all courses needed for full admission. The AC may offer these students admission to the program on a conditional basis and compile a list of “deficiency courses.” The successful completion of these courses with a grade of B or better will be a condition of full admission to the program. The student is contractually obligated to complete all deficiencies as soon as possible. The committee creates this list based on the transcripts submitted by the applicant. Students may petition to waive deficiencies if they can show they have previously successfully completed the requirement. Students should meet with their Graduate Adviser to initiate this type of petition. The written petition with all the needed supporting documentation (such as course syllabus) attached, must be submitted no later than four weeks (two weeks for summer) before the end of the first semester of enrollment.

The decision of the committee is final and can be one of three:

- The waiver is granted.
- The student is allowed to take an examination.
- The waiver is denied and the student must pass the class with a B (3.0) or higher.

The Committee’s decision is final. If the student is allowed to take an examination, it must take place no later than the second semester of enrollment. Deficiency examinations are offered once each semester and the date is announced six to eight weeks in advance. The student may take the exam only once. If the student does not perform satisfactorily on the exam, then the student must enroll in the course to satisfy the deficiency requirement. All deficiencies must be satisfied within three semesters of admission. If deficiencies are not satisfied within this time period, enrollment will be limited to deficiency courses until all deficiencies have been satisfied.

Program of Study

A graduate degree indicates mastery of a coherent program in a chosen field and the ability to engage in creative projects in that specialty. The program of study is vital in assuring the completion of a formal program of study designed to ensure the mastery of specified knowledge and skills. Forms for the program of study specification may be obtained from the department office. It is required that the program be approved by the student’s Graduate Adviser in the semester in which the student will complete 12 credit hours toward the degree, which is usually during the second semester of enrollment. It is then forwarded to the graduate officer for further approval and handling.

Once a program of study has been approved, it is the student’s responsibility to ensure that all curricular requirements and prerequisites are satisfied. If a change in the approved program is needed, a petition must be submitted to the student’s Graduate Adviser who will then forward it to the Graduate Committee for approval. It is not expected that more than four courses will change from the original program of study. If more than four courses are changed, then a new program of study should be filed.

Academic Loads

A graduate student enrolled in the fall or spring semester in nine or more credit hours is considered full time. A graduate student enrolled in the summer semester in five or more credit hours is considered full time. Any student enrolled in less than the above number of hours is considered part time. A student's academic load may be restricted as deemed fit by the student's Graduate Adviser or the Graduate Committee. International students may be asked to take an English Proficiency Test administered by the International Student Affairs Office. Performance on the test may result in recommendations that the student take one or more English language courses during the first semester. It is strongly recommended that the student abide by those recommendations.

Enrollment Policies

To remain in good standing, the student must enroll for at least one semester during each calendar year until all the courses in the program of study are completed. After this time, the student must be continuously enrolled each fall and spring semester until the degree is awarded. The student must be enrolled in the semester in which the degree will be received. Failure to follow the above policies will result in a need to apply for new admission to the program under the degree requirements in effect at the time of re-admission.

Academic Standing

The student must maintain at least a 3.0 GPA every semester. Deficiency courses, if any, must be passed with a B (3.0) or higher. A 400-level course in which the student receives a grade lower than B (3.0) cannot be used to satisfy the degree requirements. Similarly, a 5000-level course in which the student receives a grade lower than C (2.0) cannot be used to satisfy the degree requirements. However, all grades for courses taken for graduate credit shall be used in the calculation of the current GPA. No more than one grade below B (3.0) in a course taken for graduate credit can be applied toward the degree. If a student receives three grades below B (3.0) in courses taken for graduate credit or taken to fulfill a deficiency requirement, or if a student receives a grade below C (2.0) in a course taken for graduate credit or taken to fulfill a deficiency requirement, then the student will be ineligible to enroll.

Petitions

Any exception to academic policy and regulations or to the degree requirements (e.g. deficiency waiver) must be requested through a written petition. The petition form is available from the department office. The completed petition which includes an explanation for the petition should be submitted to the department office. The degree program coordinator or his/her designee will review petitions and communicate the result to the student. It is important that the petition include any necessary documents as attachments for a timely decision.

Ineligibility

Ineligible students may petition to be re-enrolled. The admissions committee whose ruling is final will review such petitions. An ineligible student will only be approved for further graduate study under the terms of a restrictive probation in the form of a written contract between the student and the Department of Biomedical and Health Informatics. The department may render a student ineligible regardless of the student's GPA. Such procedures are rare and will involve a recommendation to the dean of the School of Graduate Studies. Students have the right to appeal program decisions.

Appeal Process

Student Appeals regarding assessment, graduation, dismissal, and discipline or petitions for exception to academic regulations, are first handled at the program level as outlined in the program specific policies and procedures.

- Students may appeal program decisions to the SOM Graduate Council. The appeal and recommended decision will be forwarded to the dean of the SOM.
 - Decisions of dismissal will be final with the dean of the SOM.
- If the appeal is denied, students may appeal such decisions to the dean of the School of Graduate Studies, as designee of the chancellor.
- Such appeals must be made in writing within 14 consecutive days after the student has been notified of the decision.
- The decision of the graduate dean, as the chancellor's designated representative in such cases, is final and will be communicated in writing to the following:
 - The student
 - The graduate faculty review group(s)
 - The academic dean or director
 - The registrar

Auditing a Course

A graduate student should not take a course for audit if that student plans to take the course for credit. Once a course has been audited by a student, the student cannot take the course for credit later in the program. A graduate student cannot change a course to audit after the eighth week of the fall and spring semesters or after the fourth week of the summer semester. Changes to audit status must have the permission of the course instructor, as well as be within the allowable period. Students will be charged the standard tuition and fees for courses taken for audit. Current tuition and fee rates are available by visiting the UMKC Cashier's and Collections website:

<http://www.umkc.edu/adminfinance/finance/cashiers/graduate-tuition-fee-rates.asp>.

Academic Honesty

Students enrolled in UMKC courses assume an obligation to behave in a manner compatible with the University's function as an educational institution as described in the University Collected Rules and Regulations Chapter 200 Student Conduct, section 200.010 Standard of Conduct. Conduct for which students are subject to sanctions includes academic dishonesty, such as cheating, plagiarism, or sabotage. Conduct for which students are subject to sanctions are outlined as follows:

Cheating includes but is not limited to: (i) use of any unauthorized assistance in taking quizzes, tests, or examinations; (ii) dependence upon the aid of sources beyond those authorized by the instructor in writing papers, preparing reports, solving problems, or carrying out other assignments; (iii) acquisition or possession without permission of tests or other academic material belonging to a member of the University faculty or staff; or (iv) knowingly providing any unauthorized assistance to another student on quizzes, tests, or examinations.

Plagiarism includes, but is not limited to: (i) use by paraphrase or direct quotation of the published or unpublished work of another person without fully and properly crediting the author with footnotes, citations or bibliographical reference; (ii) unacknowledged use of materials prepared by another person or agency engaged in the selling of term papers or other academic materials; or (iii) unacknowledged use of original work/material that has been produced through collaboration with others without release in writing from collaborators.

Sabotage includes, but is not limited to, the unauthorized interference with, modification of, or destruction of the work or intellectual property of another member of the University community.

The Five-Year Rule

The program is designed so that students are continuously involved in classroom experiences, applied applications or research and so that full time student will typically complete the program within two years. If a student has been in the Master's program for **five** years and has not fulfilled all degree requirements, the faculty may elect to put the student on **inactive status** at the yearly evaluation meeting. Inactive status can only be maintained for **two semesters before being discontinued from the program**. During those two semesters, the student must submit a plan to complete his or her master's program. The plan must be approved by the student's Graduate Adviser and must specify his or her expected date of completion. If the faculty votes to approve the plan, the student will be expected to finish his or her degree within the time frame specified. Unless the faculty votes to make an exception, no student will be permitted to remain in the program for more than seven years without completing his or her degree requirements. In case of rare circumstances, a student may be permitted to continue beyond seven years. By University policy, only six credits for courses completed seven years ago or longer can be counted towards the degree requirements.

Leave of Absence

UMKC's Leave of Absence Policy provides a means for students to take an approved leave of absence from a degree program without being required to go through the re-admission process upon return to the University. Students who are approved for a leave of absence will be allowed to register for classes during the "priority registration time period" for the next semester they return from their approved leave of absence period. Students who are enrolled in the Interdisciplinary Ph.D. program in the School of Graduate Studies and the Schools of Dentistry, Law, Medicine, Nursing, Pharmacy, and the Conservatory of Music and Dance must adhere to their school's leave of absence policies and procedures as these schools may have more stringent requirements or additional procedures.

1. Students who want to take an approved leave of absence are required to fill out the "Request for Leave of Absence Form" and are required to fill out a "Return from Leave of Absence Form" in order to be allowed to enroll and return to their previous academic program.
2. The deadline to apply for a leave of absence if the student has not been attending classes and is enrolled is no later than the fourth week of the semester. Students who need to apply for a leave of absence during a semester for which they have been attending will have until the last week of classes for the current term in accordance with the academic calendar.

The deadline for applying for a return from a leave of absence is 30 days prior to the first class date of the semester in which the student plans to enroll. Students who request a leave of absence that is not planned in advance due to a medical emergency or other extenuating circumstance beyond the control of the student will be reviewed on a case-by-case basis. More information is available at:

<http://www.umkc.edu/catalog/pg2451.html>

Graduation

Students should file for graduation in the semester that completion of all coursework is anticipated. Filing should be done early in the semester, well before the deadline, which is normally the end of the 4th week of the fall and spring semesters, and the end of the 2nd week of the summer semester. The signed Application for Graduation document must be submitted to the Graduate Programs Officer by

this deadline. After verifying that the student is eligible to graduate, the Graduate Programs Officer will send the application to the Registrar.

Students who are earning a thesis MS need to work with the School of Graduate Studies for submitting the thesis for format review, scheduling the oral defense and submitting the final thesis to the library. Each semester, the School of Graduate Studies publishes a calendar (<http://sgs.umkc.edu/calendar/index.asp>) that shows the deadlines. These deadlines are firm. If a student fails to meet the deadlines, graduation will be delayed one semester.

Enrollment is mandatory for the semester of graduation.