

The University of Kansas

**HANDBOOK  
of the  
DEPARTMENT OF MATHEMATICS**

2020-21

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## **MISSION STATEMENT OF THE DEPARTMENT OF MATHEMATICS**

The principal mission of the Mathematics Department is to create and teach mathematics and to develop in both mathematics students and students from other departments the capacity to use and create mathematics. This is a wide-ranging enterprise that involves:

1. fostering a climate conducive to active faculty research and interaction with other departments;
2. enabling students to experience the value and power of mathematical reasoning;
3. providing for the specific mathematical needs of users of mathematics, e.g., in engineering, computer science, economics, physics, finance, education and other physical and social sciences;
4. developing interdisciplinary research with other units which make extensive use of mathematics;
5. providing statewide leadership in the mathematics education of all Kansans from K-12 through graduate school.

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**SENIOR STAFF  
AND THEIR FIELDS OF SPECIALIZATION  
2020-2021**

**PROFESSORS**

BAYER, Margaret	Combinatorics, Discrete Geometry
DAO, Hailong	Commutative Algebra, Algebraic Geometry, Algebraic K-theory
DUNCAN, Tyrone (Courtesy Professor, Electrical Engineering & Computer Science)	Stochastic Processes, Control Theory
FENG, Jin	Stochastic Analysis, Analysis
HUANG, Weizhang (Chair)	Numerical Analysis
KATZ, Daniel	Commutative Algebra
LANG, Jeff	Commutative Algebra
LIU, Weishi	Dynamical Systems
MANDAL, Satyagopal	Commutative Algebra
MARTIN, Jeremy	Combinatorics, Algebraic Geometry, Discrete Geometry, Computational Commutative Algebra
NUALART, David Black-Babcock Distinguished Professor	Stochastic Calculus, Mathematics Finance
PASIK-DUNCAN, Bozenna (Chancellor's Club Teaching Professorship; Courtesy Professor, Electrical Engineering & Computer Science/Aerospace Engineering)	Stochastic Adaptive Control Theory, Stochastic Statistics, Mathematics Education
PORTER, Jack (Balfour S. Jeffrey Teaching Professor)	General Topological Extensions
PURNAPRAJNA, Bangere (Courtesy Professor of Music)	Algebraic Geometry
SHEU, Albert	C*-Algebras, Quantization, Differential Geometry, Lie Groups

STANISLAVOVA, Milena  
(Chair, Economics)

Partial Differential Equations, Dynamical Systems

STEFANOV, Atanas

Harmonic Analysis, Partial Differential Equations,  
Mathematical Physics

TU, Xuemin

Numerical Analysis, Scientific Computing, Applied  
Mathematics

VAN VLECK, Erik

Computational Dynamical Systems

XU, Hongguo

Numerical Linear Algebra

## **ASSOCIATE PROFESSORS**

CHEN, Geng

Partial Differential Equations, Fluid Dynamics,  
Mathematical Physics, Mathematical Modeling

GAY, Susan

Mathematics Education

HERNÁNDEZ, Daniel

Commutative Algebra

JIANG, Yunfeng

Algebraic Geometry, Mathematics Physics

JOHNSON, Mathew

Nonlinear Partial Differential Equations

KACHI, Yasuyuki

Algebraic Geometry

OH, Myunghyun

Nonlinear Waves, Dynamical Systems, Ordinary and  
Partial Differential Equations, Numerical Analysis

SHAO, Shuanglin

Harmonic Analysis, Partial Differential Equations

TALATA, Zsolt

Probability Theory, Mathematical Statistics, Information  
Theory

WITT, Emily

Commutative Algebra

## **ASSISTANT PROFESSORS**

CAZEAUX, Paul	Partial Differential Equations, Multiscale Methods, Scientific Computing/Numerical Analysis
LIU, Zhipeng	Probability, Mathematical Physics
MANTZAVINOS, Dionyssios	Partial Differential Equations, Initial(-Boundary) Value Problems, Harmonic Analysis
MIEDLAR, Agnieszka	Numerical Analysis, Scientific Computing, Numerical Linear Algebra
PARK, Joonha	Computational Statistics, Probability Theory and Stochastic Processes
SHEN, Yannan	Mathematical Models, Partial Differential Equations, Numerical Analysis
WANG, Yuanqi	Differential Geometry

## **VISITING ASSISTANT PROFESSORS**

BROWNE, Sarah	K-theory, Functional Analysis, Algebraic Topology
LACINI, Justin	Higher Dimensional Birational Geometry, Minimal Model Program, Algebraic Geometry
MADDOX, Kyle	Commutative Algebra
ZHENG, Guangqu	Probability Theory

## **ASSISTANT TEACHING PROFESSORS**

JAMES, Daniel	Calculus Teaching Specialist
NIKNEJAD, Jila	Calculus Teaching Specialist

## LECTURERS/ACADEMIC PROGRAM ASSOCIATES

INDIKA, Avantha

Interim Director of Kansas Algebra Program

CRUMP, Iain

SCHAEFER, Alex

DOUGHERTY, Marty

WEILAND, Lindsey

## EMERITUS PROFESSORS

CHURCH, James

Probability, Statistics

COBB, E. Benton

Statistics

CREESE, Thomas

Analytic Function Theory, Function Algebras

FLEISSNER, William

Set Theory, Topology

GALVIN, Fred

Set Theory, Combinatorics

GAVOSTO, Estela

Several Complex Variables, Complex Dynamics

HIMMELBERG, Charles

General Topology, Selector and Fixed Point Theory

LERNER, David

Differential Geometry, General Relativity,  
Dynamical Systems

McCLENDON, James Fred

Topology

MOSTERT, Paul S.

Topological Semigroups, Transformation Groups,  
Category Theory

ROITMAN, Judith

Set Theory, General Topology, Boolean Algebra

TORRES, Rodolfo

Harmonic Analysis, Partial Differential Equations, Signal  
Processing



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## ADMINISTRATIVE AND COMMITTEE ASSIGNMENTS 2020-2021

Chair – Weizhang Huang

Associate Chair – Mathew Johnson

Academic Director of Graduate Studies – Jeremy Martin

Admissions Director of Graduate Studies – Geng Chen

Director of Undergraduate Studies – Mathew Johnson

Scheduling Officer - Xuemin Tu

Interim Director of Kansas Algebra Program (002 & 101) – Avantha Indika

Mathematics Newsletter – Margaret Bayer

### COMMITTEE ASSIGNMENTS: (Committee Chairperson is underlined)

#### BYLAWS/FACULTY EVALUATION PLAN REVIEW:

Martin

Katz

Liu, W.

Pasik-Duncan

Purnaprajna

Xu

#### COLLOQUIUM:

Miedlar

Shen

#### COMPUTER ADVISORY:

Talata

Cazeaux

Liu, Z.

Niknejad

Park

Witt

#### CTE AMBASSADORS:

Mantzavinos

Park

Shen

Wang

#### ENDOWMENT:

Huang

Bayer

Johnson

Porter

#### ENGINEERING LIAISON:

Tu

Pasik-Duncan

Van Vleck

#### EXECUTIVE:

Huang

Feng

Mandal

Mantzavinos

Miedlar

LIBRARY:

Shao  
Chen  
Hernandez  
Kachi  
Stefanov

MATH AWARENESS/OUTREACH:

Pasik-Duncan  
Duncan  
Hernandez  
James  
Niknejad  
Oh  
Park  
Porter  
Talata  
Tu  
Witt  
Student Member

MATHEMATICS COMPETITIONS:

*Putnam Coach:*

Liu, Z.  
Cazeaux

*KU Math Competition:*

Mantzavinos  
Dao

*Kansas Collegiate Math Competition:*

Cazeaux  
Liu, Z.

*KU MAM Math Competition:*

Miedlar  
Oh  
Shen

MATHEMATICS DISTINGUISHED LECTURE SERIES:

Huang  
Katz  
Nualart

NOMINATING:

Pasik-Duncan  
Lang  
Porter

PROGRESS TOWARDS TENURE REVIEW:

<u>Van Vleck (Cazeaux)</u>	<u>Liu, W. (Shen)</u>
Tu	Bayer
Xu	Johnson
Huang (ex officio)	Huang (ex officio)

Purnaprajna (Wang)  
Jiang  
Lang  
Huang (ex officio)

PROMOTION AND TENURE:

<u>Purnaprajna (Jiang)</u>	<u>Liu, W. (Johnson)</u>
Lang	Martin
Nualart	Stanislavova
Huang (ex officio)	Huang (ex officio)

<u>Feng (Liu, Z.)</u>	<u>Xu (Miedlar)</u>
Pasik-Duncan	Bayer
Porter	Tu
Huang (ex officio)	Huang (ex officio)

POST TENURE REVIEW:

<u>Purnaprajna (Mandal)</u>	<u>Bayer (Porter)</u>
Katz	Duncan
Lang	Sheu
Huang (ex officio)	Huang (ex officio)

RECRUITING:

Not applicable for AY2020-21.

SABBATICAL:

Nualart  
Huang  
Lang  
Van Vleck

TASK FORCE FOR SERVICE COURSES

Huang  
Bayer  
Hernandez  
Johnson  
Manzavinos  
Martin  
Niknejad  
Purnaprajna  
Van Vleck  
Weiland

TEACHING FACULTY EVALUATION

Johnson  
Dao  
Indika  
Liu, W.  
Niknejad

WELLS-MORRISON:

Pasik-Duncan  
Purnaprajna  
Stefanov  
Van Vleck  
Witt

EVALUATION OF TEACHING AND GTA TRAINING: Johnson

*Teaching Awards:*

Johnson  
James  
Liu, Z.  
Oh  
Wang  
Shen  
Mikal Nelson (student)

*Teaching Mentors:*

Johnson  
Browne  
Crump  
Dougherty  
Indika  
James  
Niknejad  
Nualart  
Schaefer  
Weiland  
Witt

GRADUATE STUDIES:

Martin  
Chen  
Dao  
Mantzavinos  
Miedlar  
Nualart  
Talata  
Wang  
Witt

UNDERGRADUATE STUDIES: Johnson

*Upper division/Majors:*

Xu  
Bayer  
Cazeaux  
Hernandez  
Oh  
Shen  
Talata

*Lower division:*

Johnson  
Indika  
James  
Lang  
Niknejad  
Pasik-Duncan  
Porter  
Witt

*Honors:*

Sheu  
Jiang  
Kachi  
Liu, Z.  
Mandal  
Wang

*Mathematics Education:*

Porter  
Bayer  
Gay

*Transfer Credit Evaluation:*

Johnson  
Bayer  
Indika  
Niknejad

*Panels for Academic Misconduct:*

Johnson  
Dao  
Duncan  
Hernandez  
James  
Mandal  
Mantzavinos  
Niknejad  
Oh  
Park  
Shao  
Shen  
Wang

MENTORS:

*Tenure Track Faculty:*

Cazeaux:

Huang  
Van Vleck  
Xu

Liu, Z.:

Feng  
Pasik-Duncan  
Talata

Mantzavinos:

Johnson  
Liu, W.  
Stefanov

Miedlar:

Tu  
Van Vleck  
Xu

Park:

Duncan  
Nualart  
Talata

Shen:

Bayer  
Johnson  
Liu, W.

Wang:

Jiang  
Lang  
Purnaprajna

*Assistant Teaching Professors:*

James:

Johnson  
Lang

Niknejad:

Bayer  
Johnson

*Visiting Assistant Professors:*

Browne:

Huang  
Johnson

Lacini:

Jiang  
Purnaprajna

Maddox:

Dao  
Katz

Zheng:

Nualart

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## UNIVERSITY CALENDAR 2020-2021

### FALL SEMESTER 2020

August 18-23	Orientation and enrollment for new undergraduates.
August 24	First day of classes.
August 28	Last day to enroll or to add or change sections online. Written permission required after this date.
September 7	Labor Day Classes in session for Fall 2020.
September 11	First Period Drop ends. Last day to cancel. Last day to drop without a “W”.
September 12	Second period drop begins. W on transcript.
September 18	20th day of classes. Last day to add, swap or change sections.
November 2	Deadline for Fall 2020 undergraduate application for graduation.
November 13	Second Period Drop ends. Last day to drop a class and withdraw from all classes.
November 24	Last day for Fall 2020 in person classes
November 25-29	Thanksgiving break.
November 30	Study week begins.
December 4	Study week ends.
December 7-11	Final examinations.
December 1	Deadline for Fall 2020 graduate application for graduation.

### SPRING SEMESTER 2021

January 18	Martin Luther King Holiday.
February 1	First day of classes.
TBD	Last day to enroll or to add or change sections online. Written permission required after this date.
TBD	First Period Drop ends. Last day to drop online. Last day to drop without a “W”.
TBD	Second Period Drop begins. W on transcript.
TBD	20th day of classes. Last day to add, swap or change sections.
TBD	Last day to submit Application for Graduation.
March	No spring recess. Classes in session for Spring 2021
TBD	Second Period Drop ends. Last day to drop a class and withdraw from all classes.
May 8	Last day of classes.
May 7	Stop day.
May 10-14	Final examinations.
May 16	Commencement.

### SUMMER SEMESTER 2021

June 8	First day of classes.
July 4	Independence Day Holiday.
July 30	Session ends; final examinations held in the last regular class period of each course.

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## GRADUATE SCHOOL CALENDAR 2020-2021

Deadline dates for enrollment and addition and deletion of course are the dates by which materials must be in the Graduate Studies office. See the Graduate Calendar 2020-121

(<https://graduate.ku.edu/sites/graduate.ku.edu/files/docs/Calendars/GS-GraduateCalendar-2020-2021.pdf>) for details.

### FALL 2020

August 24	First day of classes.
September 8	Early graduation deadline: If a student was enrolled during spring semester 2020 and meets all degree requirements for fall 2020 graduation by this date, the student is not required to enroll for fall semester 2020.
November 24	Last day of in person classes. Last day for fall 2020 master's and doctoral candidates to take final exams or defend.
November 30- December 4	Study/Reading Week
December 7-11	Final examination period.
December 18	Last day for fall 2020 master's and doctoral candidates to meet all degree requirements and to submit online Application for Graduation, file electronic theses and dissertations, and to submit other required documents to the COGA in 108 Strong Hall. <b>No extensions will be granted.</b>
December 31	December degrees awarded (formally conferred at Commencement on May 2021).

### Tentative SPRING 2021

February 1	First day of classes.
February 15	If a student was enrolled during fall semester 2020 and meets all degree requirements for spring 2021 graduation by this date, the student is not required to enroll for spring semester 2021.
March 1	Last day for spring 2021 master's and doctoral candidates to submit their Application for Graduation in Enroll & Pay to ensure their names are included in the printed program for the Doctoral Hooding Ceremony.
May 6	Last day of classes.
May 7	Stop day.
May 10-14	Final examination period.
May 14	Last day for spring 2021 master's and doctoral candidates to meet all degree requirements and to file electronic theses and dissertations, and to submit other required documents to the COGA in 108 Strong Hall. <b>No extensions will be granted.</b>
May 15	Doctoral and CLAS Masters Hooding Ceremony.
May 16	Commencement

## SUMMER 2021

June 8	Classes begin.
June 15	If a student was enrolled during spring semester 2021 and meets all requirements for summer 2021 graduation by this date, the student is not required to enroll for summer session 2021.
July 30	Last day of classes.
July 30	Last day for summer 2021 master's and doctoral candidates to meet all degree requirements and to submit online Application for Graduation, file electronic theses and dissertations, and to submit other required documents to the COGA in 108 Strong Hall. <b>No extensions will be granted.</b>
August 1	August degrees awarded (formally conferred at Commencement, May 2022).



## PART 1: DEPARTMENTAL PROCEDURES

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### ASSIGNMENT OF CLASSES

- (a) Instructors should receive in their mailboxes in 405 Snow Hall notification of the section or sections of mathematics courses they will teach each semester. (For Fall 2020, notification was sent by email.) Copies of textbooks needed to teach courses may be obtained from the Department Office.
- (b) You can print your own class rosters. In order to do this you will need to use your KU Online account. If you are unable to access your class roster, notify the Department Office.

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### OFFICES

- (a) The Departmental Office (405 Snow) for Fall 2020 is open from 9:00 am-12:00 noon. Once campus operations are back to “normal” due to the COVID-19 virus, the hours may change.
- (b) An office will be assigned to each member of the staff. Instructors can obtain a key to their offices from the Department Office in 405 Snow Hall. Keys that are no longer needed should be returned immediately to the Department Office. Graduate students and undergraduates working for KAP are required to pay a deposit of \$5 per key up to \$10. The deposit will be returned when the key is returned. There is no refund for lost keys, and an additional \$5 deposit will be required for the new key.
- (c) **OFFICE HOURS OF THE STAFF**

**Important:** Each staff member should announce his or her office hours to their classes and make arrangements so that their students can see them when necessary. *It is the responsibility of each staff member to provide adequate opportunities for his or her students to discuss their problems with them.*

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### MAIL

- (a) Each staff member has a mailbox in 405 Snow Hall. The mailboxes can be accessed from the hall. Instructors can give their combination to their grader or graders can leave the homework with the Department Receptionist.
- (b) Staff members are responsible for picking up their mail at least once a day from their mailbox.
- (c) The U. S. Mail is obtained once a day and will generally be distributed to staff members' mailboxes by 2:00 p.m. Outgoing mail is taken to the post office at 3:30 pm each day.
- (d) A supply of Campus Mail Envelopes is available in the Department Office. A Campus Mail address should contain the person's name and the Department or University Division of the person addressed.

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### DIRECTORY INFORMATION

Each member of the staff should keep on file with the Department Office a current home address, a home telephone number, email address, office hours, and a schedule of classes taking and teaching. The Department Directory is maintained online at the department's website by

## EMPLOYMENT OF RELATIVES

Persons may be appointed to university support staff or unclassified positions without regard to family relationships to other members of faculty or staff. If a person is in a position that requires an evaluation or a personnel decision as those concerning appointment, retention, promotion, tenure or salary of a close relative, such condition shall be deemed a conflict of interest and that person shall not participate in such a decision, and that person shall not participate in any group or body that is considering any such decision.

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## PAYROLL INFORMATION

- (a) Members of the staff who wish to change the number of dependents reported for income tax purposes, or the address to which their check is sent, etc., may obtain the W-4 form online at <http://www.humanresources.ku.edu/files/documents/fw4.pdf>.
  - (b) Staff members will be paid biweekly. The new academic year begins on August 18, 2020, continuing 272 calendar days (for nine-month employees) until the end of the academic year on May 16, 2021. Biweekly paydays will be every other Friday, beginning September 4, 2020. The September 4 paycheck will include pay for the period of August 9-22. (This paycheck is for only five days.) Staff on a nine-month appointment will receive the last check being issued on June 11, 2021, for the period May 16-29 (paycheck is for one day).
  - (c) You will not receive a paper pay advice. You can print a copy by logging in to the Kyou portal, select MyEmployee Info tab, and click on View Paycheck.
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## TYPING, PHOTOCOPYING AND PRINTING

- (a) For large lecture sections and for common exams the Department will arrange printing of tests. There is a large lead time required, however. Instructors in these sections should check with the Department Office for deadlines and procedures as early in the semester as possible.
  - (b) For regular size classes, instructors must type or write out the exam and make copies on the department's copier (MFD) in 405 Snow. Except in large lecture sections or for common exams, space should not be left on the test paper for students to work out solutions. Students are expected to use their own paper to work out exam questions.
  - (c) You are strongly encouraged to do all your printing on the MFD in 405 Snow. Even though there are printers in offices throughout the building it is more cost efficient to print on the MFD. The MFD is connected to the network and you can send a print command from your computer. The MFD can print on both sides of the paper and staple. The MFD can also scan documents that can be directly emailed to your computer.
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## PURCHASES AND BILLS TO THE DEPARTMENT

- (a) Staff members who have research grants may have funds assigned to them with which they can make purchases. Before purchases are made, however, one should consult the Chair of the Department or Department Office about the procedures to be followed in making purchases and in paying for them.
- (b) No purchase of any kind should be charged to the Department of Mathematics without

authorization from the Chair. *Long distance personal calls are not allowed by the State of Kansas. Any personal calls made on department phones or the fax should be charged to your personal calling card.*

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## MAINTENANCE AND REPAIRS

Requests for University services, maintenance, and repairs that are needed should be made to the Departmental Office. Difficulties arise when members of the staff make their requests directly to other divisions of the University.

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## COLLOQUIA, STAFF SEMINARS AND STAFF MEETINGS

- (a) Colloquia, in which visiting mathematicians or members of the Department or University staff present talks on their current research, are scheduled throughout the academic year. These talks are usually preceded by coffee and cookies. All students and members of the staff are urged to attend.
  - (b) No classes have been scheduled for the Senior Staff at the 12:00 hour on Monday, Wednesday or Friday. These hours should be kept free for meetings of the Senior Staff and for Committee Meetings.
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## DEPARTMENTAL TEA

(Cancelled for Fall 2020 semester.) At 3:30 p.m. every Tuesday and Thursday while classes are in session, refreshments will be served in the Mathematics Resource Room (406 Snow). All Mathematics Department faculty, staff, and students are welcome.

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## DEPARTMENT WEB SITE

Our web site address is <https://mathematics.ku.edu>. The site contains very useful information about the department, its members and activities. The web site is maintained by College Web Development Support and the Department Office, who is in charge of the official pages of the department. Please contact the Department Office if you want to add some information to the department pages.

College Web Development Support can provide limited assistance to the members of the department regarding their individual pages. Individual pages are their owners' responsibility. Department personnel are encouraged to develop their own pages following general university policies. Academic Computing Services offers an extensive training program and further information can be found in the university's web pages.

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## COMPUTER ACCOUNTS/ELECTRONIC MAIL

The University provides email services and access to other electronic resources through a KU Online ID. Once you have your student/employee ID number this account can be setup using the "Create New Online ID" option at: <https://technology.ku.edu/accounts/personal>. Your KU Online ID is used to access class records, grade sheets, university web accounts, and the departmental copier (MFD). This account is your point of contact for all official departmental correspondence. **You are responsible for checking your email at least once a day.**

The Department has two computer labs located in 159 and 455 Snow Hall. The lab in 159 Snow is dedicated only to administering the Gateway exams. The lab in 455 Snow is equipped with twenty (10 for Fall 2020) Mac computers connected to the department's network. This lab is used for both undergraduate and graduate classes. To obtain accounts for your class, email the

course number and number of students in your class to Anthony Johnson-Powell, IT Coordinator ([tsc\\_math@ku.edu](mailto:tsc_math@ku.edu)). There is a basic office software program on the computers as well as MATLAB and Mathematica. To start these programs you need to click the icons on the desktop. Detailed instructions to accessing the programs on the lab computers can be found at <http://www.math.ku.edu/computing>.

If you have problems accessing your accounts or have questions regarding access to electronic resources please contact Anthony Johnson-Powell, IT Coordinator, at [tsc\\_math@ku.edu](mailto:tsc_math@ku.edu).

### Electronic Mail Policy

THE UNIVERSITY OF KANSAS LAWRENCE CAMPUS, March 1998

(<https://documents.ku.edu/policies/provost/ElectronicMailPolicy.htm>)

The University of Kansas (Lawrence and Edwards Campuses) provides electronic mail [1] for use by students, faculty, staff, and others affiliated with KU. The University encourages the appropriate use of email to further its mission goals. KU provides email for use when engaging in activities relating to instruction, research, clinical and public service, and management and administrative support. KU also permits incidental personal use provided that such use does not interfere with KU operations, does not generate incremental identifiable costs to KU, or does not negatively impact the user's job performance. [2]

KU email may not be used for commercial purposes, for personal financial gain, to distribute chain mail, or to support outside organizations not otherwise authorized to use University facilities. Individuals who wish to use KU email in support of external organizations (charities, for example) must secure written or email approval of the Provost and Executive Vice Chancellor (Provost) or the Provost's designee. The Provost ordinarily will approve such use only when it furthers KU's mission and goals.

Registered student and campus organizations such as the College Republicans or the KU Young Democrats may use their membership list-serves to notify members of meetings, speeches, or rallies. Faculty members may use electronic systems for course-related discussions of political topics. Individuals may use email to exchange ideas and opinions, including those dealing with political issues. The latter is generally considered an incidental use of the email system. However, KU email may not be used to support external organizations, partisan political candidates, party fundraising, or causes. [3]

The University supports a climate of trust and respect and does not ordinarily read, monitor, or screen electronic mail. However, complete confidentiality or privacy of email cannot be guaranteed. Confidentiality cannot be guaranteed because of the nature of the medium, the need for authorized staff to maintain email systems, and the University's accountability as a public institution. The Provost or his designee may authorize access to employee or student email in a number of circumstances including, but not limited to, situations involving the health or safety of people or property; possible violations of University and Board of Regents codes of conduct, regulations, or policies; possible violations of state or federal laws; subpoenas and court orders; other legal responsibilities or obligations of the University; or the need to locate information required for University business.

The University routinely uses email for both formal and informal communication, including emergency messages, with faculty, staff and students. Faculty, staff, and students are required to register an email account or utilize a University-provided account during their enrollment or

employment at the University. These addresses are used for University business and official University communications. All faculty and students, and all staff who have access to email, are expected to check their email regularly for University communications. Official University communications include, but are not limited to, enrollment information, grade reports, financial statements and other financial information, library overdue notices, and policy announcements.

KU email may be used to survey students, faculty, and staff. Requests to conduct surveys through email should be directed to the Office of the Provost.

Because use of broadcast email places stress on the email system, it is Lawrence campus policy to use the broadcast function very sparingly. In addition to the business communications cited above, it is used for messages from the Chancellor's Office, the Provost's Office, or other offices about mission-related matters or issues of broad interest to the University community, and for emergency messages dealing with power outages, street closings, or other public safety matters. Any request to use broadcast email to contact students, faculty, or staff, including survey requests, must be approved in advance and in writing or by email by the Office of the Chancellor or the Office of the Provost.

The broadcast function generally is not used to announce events such as concerts, theatre performances, conferences, symposia, or colloquia sponsored by KU units or organizations. Public events sponsored by KU units or registered student and campus organizations may be announced in KU Today, the electronic newsletter produced by News and Media Relations and posted on the electronic KU calendar (for instructions, see <http://publicaffairs.ku.edu/media/submit>.) The News and Media Services regularly broadcasts a complete KU Calendar of Events.

KU email accounts remain the property of the State of Kansas. The University routinely disables accounts after graduation or termination from the University.

Violation of this policy may result in the full range of sanctions, including the loss of computer or network access privileges, disciplinary action, suspension, termination of employment, dismissal from the University, and legal action. Some violations may constitute criminal offenses under local, state, and federal laws. If appropriate, the university will carry out its responsibility to report such violations to the appropriate authorities.

Employment actions should be handled by the appropriate department with the advice and guidance of Human Resources/Equal Opportunity and the Office of the General Counsel. Student disciplinary actions should be handled by the appropriate department in collaboration with Student Success.

If there is disagreement with an employment action or student disciplinary action made under this policy, appeals must be directed through existing University appeal procedures established for employees and students.

[1], [2], [3] See definitions at the web address given above.

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## DEPARTMENTAL POLICY ON RECORD RETENTION AND DISPOSAL OF PRIVATE INFORMATION

### **Importance of Managing Private Information**

Employees of the Department of Mathematics manage information about students, faculty, staff, GTAs, and outside individuals when performing tasks in teaching, research, service, and administrative processes. Each member of the University community has a role in managing the information entrusted to us by students, faculty, staff, and others. It is important that all Mathematics Department personnel follow the detailed information below to protect this information.

It is the responsibility of all University employees and other covered individuals to:

1. understand what constitutes Private (Confidential or Sensitive) or Public University information, and
2. handle such information in a manner that maintains the necessary confidentiality, integrity and availability of the information in any form (electronic, documentary, audio, video, etc.) throughout the entire information lifecycle (from creation through disposal).

### **Definition of Private Information**

Private information is any information that is protected by state and/or federal law or that the University is contractually obligated to protect. Private Information also includes information designated by the University as private (confidential or sensitive) through the creation of standards, procedures and guidelines. Access to these data must be tightly monitored. Typically private information identifies an individual or makes an individual easily traceable (such as a KU student number, social security number, name and grade information, health care record (including leave requests, notes from healthcare professionals, etc.) and financial information regarding an individual or account. These records may be any information recorded in any manner (document file, computer program, database, image, recording, or other means of expressing fixed information). These records may be part of a system for storing, disseminating, or organizing records and include, but are not limited to computers, telephone lines, voice mail, fax machines, and filing cabinets.

### **Protection of Private Information**

All University employees are required to abide by state and federal laws and University policies, procedures and guidelines regarding the handling and protection of private information (including but not limited to FERPA, HIPAA, GLB, and others). Mathematics Department employees who become aware of a breach of the privacy or security of private information must report such breach immediately to the Department Chair who will notify the Information Services Customer Service Center at 864-8080. The Information Services Customer Service Center will notify the KU Privacy Office and/or the KU IT Security Officer as required by the particular incident.

The Mathematics Department endeavors to take reasonable precautions to maintain privacy and security within the scope of operations. The Department cannot guarantee that these efforts will always be successful and, therefore, users must assume the risk of a breach of University private information. Individuals are advised to be discreet and cautious in their handling of private information in their classrooms and offices.

The University of Kansas has published policy and guidance on information management,

record retention and handling of private information at the following websites:

- Information Management:  
<http://www.provost.ku.edu/policy/infomanagement/>
- Office of Institutional Compliance: <http://www.oic.ku.edu/>
- Federal Educational Rights Privacy Act (FERPA):  
<http://www.vpss.ku.edu/records.shtml>
- Student Records Policy:  
<http://policy.ku.edu/registrar/student-record-policy>
- The Health Insurance Portability & Accountability Act (HIPAA):  
<http://www.oic.ku.edu/hipaa-committee>

Other related documents and laws are:

Student Records Policy, Information Technology Security Policy, Data Removal from KU-Owned Computers, Internet-Based Credit Card Processing Policy, Password Policy, Acceptable Use of Electronic Information Resources, Procedures for Investigative Contact by Law Enforcement, Electronic Mail (Email) Policy, Gramm-Leach-Bliley Student Financial Information Security Program, Gramm-Leach-Bliley Financial Services Modernization Act (GLB), Electronic Communications Privacy Act (ECPA), Patriot Act, Computer Fraud & Abuse Act, Kansas Open Records Act, Americans with Disabilities Act (ADA).

### **Definition of Student Directory Information**

University of Kansas Student Records policy (<http://www.policy.ku.edu/registrar/student-record-policy>), certain information defined as student “Directory Information” may, under certain prescribed circumstances, be released. The release of Directory Information is never acceptable when a student “hold” has been placed on a student record”. At KU, Directory Information is defined as: “name; current address and telephone number; permanent address and telephone number; e-mail address; level and school; date of birth; major field of study; enrollment status (full-time; half-time; less than half-time); participation in officially recognized activities and sports; height and weight of members of athletic teams; dates of attendance; degrees and awards received; and the most recent previous educational institution attended by the student. The name(s) and address(es) of the student's parent(s) or guardian(s) may be disclosed when used for an official University news release about the student's receipt of degrees or awards or about participation in officially recognized activities or sports. Such parent information may also be disclosed for purposes in the interest of University advancement. The name(s), position(s), and length of service and courses taught may be disclosed for student employees.” The University Registrar or KU Privacy Office may be consulted regarding what is releasable information.

### **Disposal of Private Information Contained on Paper or CDs**

All Mathematics Department personnel must dispose of information that contains private, sensitive or confidential materials in a security container. The Department has thirteen (13), locked security containers located throughout Snow and Strong Halls. The boxes in Snow Hall are located in rooms with department printers (455), math reading room 651), in the Math Department office (405) next to the mailboxes and coat rack, in each of the three Administrative Staff offices, in the Chair's and Associate Chair's offices and in (307) Advisor office. There are three boxes in Strong Hall for use for the KAP program. The security company picks up our

materials on a regular monthly schedule, shreds the contents on-site and recycles the materials.

Use of the on-campus recycling bins (“blue bins”) or trash receptacles are for Non-Confidential materials only. It is very important to place private information in one of the security containers for appropriate, secure disposal. You are responsible for emptying your trash cans in your office according to appropriate procedures.

### **Procedures Specific to the Mathematics Department**

1. All Mathematics Department personnel should familiarize themselves with the Federal Educational Rights Privacy Act (FERPA): <http://www.vpss.ku.edu/records.shtml> to understand how to treat student information. Private information should be kept secure and not in view of students who enter your office. Disposal of private information should be placed in one of the department’s security containers. Private information includes, but is not limited to, exams, homework, class record books, grade sheets, seating charts, medical records, Schedule Change Forms, and Change of Grade forms.

All personnel should limit the use of KUID numbers. A student’s number cannot be posted in a public place, especially in combination with his/her name. Lists or seating assignments with student names and corresponding KUIDs cannot be circulated in the classroom. Graded homework and exams cannot be left unsecured where any individual can access them. It is recommended to not have student’s write their KUID on homework or exams. Do not give student numbers to paper graders or student assistants.

2. The Mathematics Department Administrative Staff are required to pay special attention to the safekeeping of all departmental personnel records, social security numbers, medical records, employment applications, graduate school applications, departmental reports, correspondence, business records, committee work, and all materials associated with the administration of student records. All materials should be handled with a high degree of security and confidentiality and should only be accessed and/or granted by the Administrative Staff. They should refer to the University’s record retention policy at [http://policy.ku.edu/sites/policy.ku.edu/files/RecordsRetentionSchedule\\_20150902\\_0.pdf](http://policy.ku.edu/sites/policy.ku.edu/files/RecordsRetentionSchedule_20150902_0.pdf). Disposal of private information should be in one of the department’s security containers.
3. Graduate Teaching Assistants and Lecturers in addition to the above are required to turn into the Mathematics Department office when they are no longer employed by the department their record of grades, office keys, and the final exams from their last year of teaching. Before turning in their keys, they should accompany an Administrative Staff member to check their office to be sure they have not left behind any private information that should be appropriately discarded.
4. Undergraduate Student Employees should be reminded by their instructors/supervisors that all materials they handle from the Mathematics Department is confidential and that they should not discuss student work with anyone other than their supervisor. They should return all materials (homework, exams, grade books, seating charts) back over to their supervisor.

Undergraduate Student Employees should ask the receptionist at the front desk to retrieve and return student homework to their instructor’s mailbox. Some instructors may give student employees the combination to their mailbox so that it may be opened from outside the office. Materials in instructor mailboxes should be treated as personal



and confidential property of the individual. Student employees should only remove items assigned to them by their supervisor.

5. At no time should a student's performance and behavior or classroom demeanor be discussed on social media.

### **Protection of Electronic Communication**

The Mathematics Department provides faculty, staff and students with various electronic and information technology resources. While these resources facilitate easy storage and exchange of information they present additional security concerns. Use the guidelines given (Keeping it Confidential: Recommendations for Privacy of Information) by the KU Privacy Office at <http://assets.drupal.ku.edu/sites/provost.ku.edu/files/FinalTips071009.pdf> and the following guidelines to help prevent unauthorized disclosure of private information.

1. Use strong passwords and never share your account information with anyone. Do not keep your password in your workspace (i.e., on Post-It notes).
2. All personal information including student records should be stored on Department or University provided systems and services. Do not use off-site services (such as Google Docs) to store any student records.

All users must store any data classified as Level 1 in approved secure storage locations. Details on use of the department provided secure storage location and on the classification of data can be found at: <http://www.math.ku.edu/computing-help/policy/level1-data.html> .

3. Do not assume that email is a private communication. Most email servers do not use encrypted connections and it is possible for a third party to intercept the contents of a message as it passes between networks.
4. Users who need to exchange files or information with other users or off-site users should contact the system administrator (TSC\_Math@ku.edu) for further information on how to do this in a secure manner.
5. Use a confidentiality statement at the end of all emails. Information on the department's computing policy and email confidentiality statement can be found at <https://mathematics.ku.edu/e-mail-confidentiality-statement>.
6. Limit or eliminate the storage of private information on portable devices. If you keep private information on a laptop/memory stick be sure that it requires a password for access and use encrypted file systems if possible.

## **PART 2: ADVISING**

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### **ADVISING AND ENROLLMENT OF FRESHMEN AND SOPHOMORE STUDENTS**

The College assigns mathematics majors to the department for advising. The department then assigns students to the faculty who serve on the Upper Division/Majors Undergraduate Studies Committee, but all senior staff should be accessible to our majors and be available to advise them. The main advising periods occur late in the fall and spring semesters, but some advising is done at the beginning of each semester and during summer orientation.

Normally all faculty members are expected to take part in the process of enrollment. Each faculty member is responsible for learning about the course offerings and regulations of the appropriate department or school, as well as the general regulations of the University. Departmental chairpersons will assist the faculty member in acquiring such information.

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### **ADVISING AND ENROLLMENT OF MATHEMATICS MAJORS IN THE COLLEGE OF LIBERAL ARTS AND SCIENCES**

- (a) Undergraduates are required to declare a choice of major by the first semester of their junior year. To declare a mathematics major a student should meet with a mathematics department advisor and fill out a "Declaration of Major Form". The form, with the advisor's signature, should be handed in to the department office; a copy is then forwarded to the College Office. A student who wishes to obtain more than one major must file a Declaration of Major form with each department. Students are free to change their major at any time.

A student can earn either a B.A. or B.S. with a mathematics major. There is no B.G.S. Degree in mathematics.

- (b) Students who have completed fewer than 60 credit hours are required to meet with an advisor before enrollment. Math majors who have completed 60 credit hours or more are encouraged to meet regularly with a math faculty advisor. At enrollment time, appointments may be made on the web. At other times, students should contact a faculty member directly, or contact the Mathematics Department office for a referral.
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### **ADVISING AND ENROLLMENT OF GRADUATE STUDENTS**

- (a) The advising of graduate students is scheduled to be completed by August 12. Those members of the senior staff who have thesis students (or expect to) and/or who are general graduate advisors (see below) should be available in their offices during this period (unless duties require them to be elsewhere).
- (b) To enroll as a graduate student in Mathematics, a student should first refer to Enroll and Pay and follow the steps outlined there. Then meet with your advisor.

If a student is already working on a thesis or will begin work on a thesis, the supervisor of the thesis will be the student's advisor. All other students should see Professor Jeremy Martin, Director of Graduate Studies.

Note that the Department requires every student to:

1. take a graduate mathematics course or a course approved by the Graduate Studies Committee (seminars in which the student receives and actively participates

- fulfill this requirement but reading courses generally do not) and
2. complete at least 9 approved hours during each of the fall and spring semesters (graduate teaching assistants and students who have completed the departmental MA oral examination or Ph.D. preliminary written examinations are required to enroll in at least 6 hours).
- (c) The procedure for completing enrollment is that outlined online at Enroll & Pay, <https://sa.ku.edu/psp/csprd/?cmd=login>.

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## THE REQUIREMENTS FOR A BACHELOR OF ARTS IN MATHEMATICS

A total of 120 hours is required to graduate with a B.A. in the College of Liberal Arts and Sciences. The requirements for all students earning a B.A. in the College include the KU Core Curriculum (<http://kucore.ku.edu>), a laboratory or field experience, and proficiency in a language other than English. See: College B.A. Requirements (<http://catalog.ku.edu/liberal-arts-sciences/#undergraduatetext>).

### **Mathematics Courses (29-30 credits)**

1. Calculus: through MATH 127 or 147 (12 credits)
2. Linear Algebra: MATH 290 and 590, or 790 (5 credits)
3. Analysis: MATH 500 or 765 (3 credits)
4. One Sequence from List AB (6 credits)
5. One or more electives, as needed, to bring up to 15 the total credit hours in mathematics courses numbered 300 and above (excluding Math 365 and Math 409)

Select one of the following (two semester) sequences. (Courses marked with an asterisk are normally taught only every second year):

<b>List AB</b>	Sequences for Mathematics Courses Requirement #4:
500-646	(Intermediate Analysis and Complex Variables and Applications)
526-605*	(Applied Mathematical Statistics I and Applied Regression Analysis)
526-611*	(Applied Mathematical Statistics I and Fourier Analysis of Time Series)
540*-558	(Elementary Number Theory and Introductory Modern Algebra)
540*-791	(Elementary Number Theory and Modern Algebra I)
558-601*	(Introductory Modern Algebra and Algebraic Coding Theory)
581-591*	(Numerical Methods and Applied Numerical Linear Algebra)
590-790	(Linear Algebra I and II)
601-791	(Algebraic Coding Theory and Modern Algebra I)
605-611	(Applied Regression Analysis and Fourier Analysis of Time Series)
627-628	(Probability and Mathematical Theory of Statistics)
646-647	(Complex Variables and Applications and Applied Partial Differential Equations)
647-648	(Applied Partial Differential Equations and Calculus of Variations and Integral Equations)
647-650*	(Applied Partial Differential Equations and Nonlinear Dynamical Systems)
648-650*	(Calculus of Variations and Integral Equations and Nonlinear Dynamical Systems)
660*-661*	(Geometry I and II)
724*-725*	(Combinatorial Mathematics and Graph Theory)

727-728 (Probability Theory and Statistical Theory)  
765-766 (Mathematical Analysis I and II)  
781-782 (Numerical Analysis I and II)  
790-791 (Linear Algebra II and Modern Algebra)

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## THE REQUIREMENTS FOR A BACHELOR OF SCIENCE IN MATHEMATICS

The degree of Bachelor of Science in Mathematics offers more extensive training in mathematics and its applications than is possible in the B.A. curriculum. The requirements for the B.S. in Mathematics allow a great deal of flexibility in choice of courses and concentrations. Students should plan their programs carefully to meet individual interests and goals, and carefully check the prerequisites for all courses in their programs.

Students should declare the B.S. in Mathematics with the Department of Mathematics. Consult a mathematics departmental advisor early, preferably during the first academic year, and continue to meet with an advisor throughout your academic career.

A total of 120 hours is required to graduate with a B.S. in the College of Liberal Arts and Sciences. The requirements below account for 86-90 of them. The remaining credits are electives.

### **Hours and GPA requirements:**

Minimum hours required in mathematics courses: 41

Minimum hours of course requirements: 86

Minimum grade-point average in math courses numbered 300 and above: 2.0

### **Other College requirements:**

Minimum hours required for degree: 120

Minimum hours in all courses numbered 300 and above: 45

Minimum overall grade-point average for degree: 2.0

- I. **MATHEMATICS COURSES (41-42 Credits)** (Courses marked with an asterisk are normally taught only every second year):
1. **Preparation:** Through MATH 127 or 223 (or 147 or 243) and 290 (or 291) 14-15 credits
  2. **Differential Equations:** Math 320 or Math 220 (or 221) 3 credits
  3. **Linear Algebra:** Math 590 or 790 3 credits
  4. **Analysis:** Math 500 or 765 3 credits
  5. **Modern Algebra:** Math 558 or 791 3 credits
  6. **Statistics:** Math 526, 628 or 728 3 credits
  7. **One sequence from List A** 6 credits
  8. **Second sequence from List A or List B** 6 credits
  9. **Electives**, if needed, to bring up to 24 the total credit hours in mathematics courses numbered 450 and above. (Mathematics courses used to satisfy requirements #3 through #8 above count towards this 24 credit hour total.)

**List A** (Sequences for Mathematics Courses Requirements 7 and 8):

MATH 627 – 628  
MATH 660\* - 661\*  
MATH 727 – 728  
MATH 765 – 766  
MATH 781 – 782  
MATH 790 – 791

**List B** (Sequences for Mathematics Courses Requirement 8):

MATH 500-646      MATH 601-791  
MATH 526-605\*    MATH 605-611  
MATH 526-611\*    MATH 646-647  
MATH 540\*-558    MATH 646-765  
MATH 540\*-791    MATH 647-648  
MATH 558-601\*    MATH 647-650\*  
MATH 581-591\*    MATH 648-650\*  
MATH 590-790      MATH 724\*-725\*

**II. CONCENTRATION IN APPLIED MATHEMATICS AND RELATED FIELDS  
(8-9 credits):**

Three upper-division courses, totaling at least 8 hours, which make significant use of mathematics. At least two courses must be in the same area. Following is a list of approved courses for the concentration. Other upper-division courses making significant use of mathematics can be used for the concentration with the approval of a mathematics department advisor. *Students should be aware that many of these courses have prerequisites that do not count towards the mathematics major.*

Statistics

*A student using at least two statistics courses for the applied concentration must take MATH 627-628 or MATH 727-728, which will then count as a List A sequence.*

MATH 605, 611, 624  
ECON 817, 818

Economics and Finance

ECON 526, 590, 620, 700, 701, 715, 716  
FIN 310, 410, 415, 420, 425  
MATH 630  
SCM 310

Biology

BIOL 350, 412, 743  
BINF 701, 702

Chemistry

CHEM 530, 535, 620

### Physics and Astronomy

PHX 313, 511, 518, 521, 531, 621, 631, 655, 671, 711, 741

ASTR 591, 592, 691

### Engineering

Aerospace Engineering AE345, 445, 507, 545, 550, 551, 552, 750

Chemical and Petroleum C&PE211, 511, 521, 523

Civil Engineering CE201, 300, 301, 311, 330, 461, 704, 730

Electrical Engineering & Computer Science EECS211, 220, 360, 420, 444, 510, 560, 562, 638, 644, 649, 660, 662, 672, 718, 730, 744

Mechanical Engineering ME201, 311, 312, 508, 510, 612, 682

### Curriculum & Teaching

*A student using at least two Curriculum & Teaching courses for the applied concentration must complete PHSX 211 (as one of the natural science courses) and must complete at least one of the geometry courses MATH 559, MATH 660, or MATH 661.*

C&T 360, 366, 460

## III. **GENERAL EDUCATION REQUIREMENTS (37-39 credits):**

Completion of the University Core Curriculum (30 credits).<sup>[[SEP]]</sup>

- MATH B.S. students must take ENGL 101 (or exemption) and ENGL 102 or 105 (or exemption) to fulfill the Written Communication requirement of the KU Core.
- MATH B.S. students must take a natural science course outside of mathematics to fulfill Goal 3 Background of Knowledge, Natural Science of the KU Core.
- The Quantitative Literacy requirement and Goal 6 Integrative Knowledge of the KU Core are satisfied by mathematics courses required for the B.S.

Additional General Education Requirements (at least 7 credits).<sup>[[SEP]]</sup>

- EECS 138 or 168 or 169<sup>[[SEP]]</sup>
- One additional natural science course outside of mathematics, to complete at least seven hours of natural science, including a laboratory.

### **Specific policies regarding requirements**

- A mathematics course used to satisfy requirements #3 through #6 may also be used as part of a sequence for requirements #7 or #8.
- A course cannot count towards both the Mathematics Courses requirement and the Concentration in Applied Mathematics and Related Fields.
- Higher level courses may be substituted for mathematics courses in requirements #3 through #8. (e.g., Math 810 for Math 500 or 765; Math 830 for Math 558 or 791)
- A student who plans to attend graduate school in the mathematical sciences is encouraged to take two sequences from List A. Such a student is also encouraged to take courses in French, German, or Russian.



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## SUGGESTED TRACKS IN MATHEMATICS

Many students have strong interests in particular areas of mathematics. The Department has created three informal tracks within the B.S. program: a statistics track, an applied mathematics track, and a track in pure mathematics for those considering obtaining a graduate degree in pure mathematics. These tracks are advisory only. Students without strong interests in one of these areas are encouraged to put together a broad program within the B.S. Degree.

### I. TRACK IN STATISTICS:

#### A. Mathematics Department

Calculus through MATH 127 or 223 (or MATH 147 or 243) and MATH 290 (or MATH 291)

Mathematics distribution (12 hours):

MATH 320

MATH 500 or 765

MATH 628

MATH 558 or 791

MATH 590 or 792

Mathematics concentration: two sequences:

MATH 627-628 and any other sequence

Mathematics electives: additional courses to complete a total of 24 hours in mathematics courses numbered 450 or above. Recommended courses include 581, 630, 781.

#### B. Concentration in applied mathematics and related fields:

For the statistics concentration, choose MATH 605 and 611. They are offered only every second year. A third statistics course in the Department may or may not be offered. Other good choices for applied concentration courses are MATH 630, Actuarial Mathematics, and Economics and Finance courses.

Note: Students who are interested in an actuarial career should complete the statistics track, take MATH 630 and ECON 526, Introduction to Econometrics, (and its prerequisites ECON 142 and 144). Also recommended are ACCT 200, FIN 310 and FIN 415.

### II. TRACK IN APPLIED MATHEMATICS:

#### A. Mathematics Department:

Calculus through MATH 127 or 223 (or MATH 147 or 243) and MATH 290 (or MATH 291)

Mathematics distribution (15 hours):

MATH 320

MATH 500 or 765

MATH 526 or 628

MATH 558 or 791

MATH 590

Mathematics concentration: two sequences:

MATH 781-782

any other sequence

Mathematics electives (recommended):

one of MATH 601, 630

MATH 750

MATH 646

MATH 647

B. Concentration in applied mathematics and related fields:

No recommendation.

III. TRACK IN PURE MATHEMATICS FOR STUDENTS WANTING TO GO TO GRADUATE SCHOOL IN PURE MATHEMATICS:

A. Mathematics Department:

Calculus through MATH 127 or 223 (or MATH 147 or 243) and MATH 290 (or MATH 291)

Mathematics distribution (15 hours):

MATH 320

MATH 590 or 790

MATH 628

MATH 765

MATH 791

Mathematics concentration: two sequences:

MATH 765-766

MATH 790-791

Mathematics electives (recommended):

MATH 627

MATH 646

MATH 660

B. Concentration in applied mathematics and related fields:

No recommendation.

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## DOUBLE MAJOR IN MATHEMATICS AND ANOTHER FIELD

Students often earn two majors in the College of Liberal Arts and Sciences. It is also possible to earn a B.S. or B.A. in Mathematics while getting a degree in another School of the University. All general education requirements for both majors or degrees must be satisfied. A course cross-listed with another department may count towards both majors as long as 15 credit hours are unique to each major. There are currently three cross-listed courses: MATH/EECS 510, MATH/EECS 781 and MATH/EECS 782.

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## MINOR IN MATHEMATICS

Students getting a bachelor's degree (B.S., B.A., or B.G.S.) in the College of Liberal Arts and Sciences, with a major in another field, may earn a minor in mathematics. Students getting undergraduate degrees in the other KU Schools can also earn a minor in math. The requirements are the same for both.

The minimum course requirements for the minor are completion of 18 credit hours of mathematics courses including MATH 127 9r 147. At least 12 credit hours must be numbered 300 and above, but not including MATH 365. Many upper-division courses require MATH 220 or 290. The grade point average for all mathematics courses must be at least 2.0.

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## GRADUATION WITH HONORS

Students interested in graduating with departmental honors are strongly urged to inform the Associate Chair or the Chair of the departmental Honors Committee of their intention as soon as possible. Ideally, this should happen by the end of the sophomore year to ensure sufficient time to complete all the requirements. The formal requirements of the College and the Department appear below.

### **College requirements**

Graduation with departmental honors is awarded in recognition of exceptional performance in mathematics, completion of a program of independent research or an alternative project, and a strong overall academic record. In addition to the departmental requirements (see below), the College requires the following for graduation with departmental honors:

1. Candidates must inform the Associate Chair or the Chair of the Honors Committee of their intention to work for departmental honors no later than the time of enrollment for the final undergraduate semester. Copies of the intent form should be returned to College Student Academic Services.
2. The candidate must have achieved an overall GPA of 3.25, and a GPA of at least 3.5 in Mathematics. These grade point averages include work done at other institutions, as well as at KU.
3. Successful completion of all departmental honors requirements must be certified to the departmental honors coordinator(s) by a panel composed of at least three members of the College faculty who have heard the oral presentation of the independent research.

### **Departmental requirements**

In addition to the College requirements above, the student must attain a grade point average of 3.5 or above in all mathematics courses taken (numbered 500 or above). The student must also complete two of the sequences Math 727-728, Math 765-766, Math 781-782, and Math 790-791 with a grade no lower than B- in any of these courses.

The student must make a satisfactory oral presentation to the department, preferably on a topic related to his or her mathematics course work. It is suggested that the oral presentation be made during the second semester of the senior year. Preparation should include enrollment in Math 699 (Directed Reading). The student should make arrangements with a mathematics advisor in the beginning of the semester in which the presentation is to be made.

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## TEACHING CERTIFICATION: STEMTEACH AT KU

Careers in science, technology, engineering and mathematics (STEM) all require creative thinking and leadership. STEMTeach KU is designed to fit the unique needs of STEM majors in a way that develops their ability to be leaders in their field. In this program, students can pursue a teaching license alongside earning a degree in one of several STEM fields. Following the closure of the Center for STEM Learning, KU students can still pursue STEM teacher preparation through a partnership between the School of Education and College of Liberal Arts & Sciences. Prospective students and current UKanTeach students should contact [stemteach@ku.edu](mailto:stemteach@ku.edu) for more information. This replaces the UKanTeach program.

## PART 3: DEPARTMENT TEACHING PROCEDURES

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### SUGGESTIONS FOR THE FIRST DAY

- (a) You should print off your class roster online by the first day of classes. Once you have an official roster, you should carefully check to make sure that everyone attending is on your roster. Students who are not on the roster should be referred to the Enrollment Center. Students wishing to enroll in closed lower-division courses should contact Jonnette Oakes (jonnette\_moakes@ku.edu), undergraduate academic advisor.
- (b) University Senate regulations require that instructors provide students with a course syllabus. You can do this electronically by posting it on your web page or in Blackboard. The syllabus should include, at a minimum, your name, your office, your office hours, course prerequisites, and grading procedures. You may include any other information about the course you feel is appropriate.

The more students learn early in the course about the nature of the course and your mode of operation, evaluation and grading, the more comfortable they feel and the fewer (to them) rude surprises later in the course.

The Student Access Center coordinates accommodations and services for all students who are eligible. If a student in your class is eligible for accommodation, he or she will bring you an Accommodations Request Form for you to sign. The most common accommodation is extra time on tests. You should consult with the associate chair, if necessary, to determine the best way to implement the accommodations.

- (c) Plan a full period of work for the first day. The students should have their textbooks when they come to the first meeting of the course, and there is no reason for delaying the start of work.
- (d) Make an assignment for the next class meeting. From the very first day of the course, you should claim your share of the student's time.

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### SUGGESTIONS FOR THE FIRST TWO WEEKS

- (a) Follow the outline for each course closely for at least two weeks. This instruction must be followed very carefully in each course in which there is more than a single section. For reasons beyond the control of everyone, there are numerous students who will transfer from one section of a course to another section of the same course during the first week. If each section has been taught a different course, considerable disruption results in the work of all sections.
- (b) By the end of the first two or three weeks there should be sufficient written work (probably including a quiz) which has been graded carefully by you so that your students can determine whether they are making satisfactory progress. It is suggested that one plan the course so that students have a good idea of their progress well in advance of the last drop date of the semester.
- (c) If the room in which your class is being held is unsatisfactory for any reason, report this fact to the Department Office.
- (d) If the students are unable to obtain textbooks for your course, please report this fact to the Department Office immediately.

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## SUGGESTIONS FOR THE ENTIRE SEMESTER

- (a) Teach the course which is specified by the course description and the course outline.
- (b) At any time in the semester, students should be able to discuss their progress in your course. Instructors should be available in their offices at a reasonable number of stated hours. Each instructor will provide the Department with his/her office hours.
- (c) The following is a summary of your responsibility:
  - i. Do your job well.
  - ii. Do your job in such a way that you obviate legitimate complaints about yourself, the Department, and the University.
  - iii. Remember that your students will have at least the difficulty with the material that you had when you first met the subject matter.
- (d) Instructors must meet their classes as scheduled since no member of the Department has the authority to cancel a class which has been scheduled by the University. In particular, the University does not permit the individual cancellation of classes before and after holidays. **IF FOR ANY REASON AN INSTRUCTOR IS UNABLE TO MEET ONE OF THEIR CLASSES, THEY SHOULD REPORT THIS FACT TO THE CHAIR OR ASSOCIATE CHAIR OF THE DEPARTMENT IMMEDIATELY.** See *PART 4: Departmental Policy on Instructor Absences from Class*.
- (e) Please read carefully Error! Reference source not found. (later in **Part 3**) regarding cheating.

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## TEXTBOOKS

- (a) Students can buy textbooks at the Kansas Union Bookstore for all courses taught by the Department of Mathematics.
- (b) All orders for textbooks to be used in the Department's courses should be made through the Department Office and are then forwarded to the Kansas Union Bookstore.
- (c) The Department supplies desk copies of textbooks to its instructors. All desk copies of textbooks are ordered from the publishers by the Department Office. Desk copies should be returned to the Department at the end of each semester.

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## CALCULUS TRANSITION

In the Fall of 2015 we began the transition from the two-semester calculus sequence (MATH 121-122) plus vector calculus (MATH 223) to a three-semester sequence: MATH 125 Calculus I, MATH 126 Calculus II, and MATH 127 Calculus III. MATH 125 ends with the introduction to the integral, simple antiderivatives, and basic applications. MATH 126 covers integration techniques, applications of integration, infinite sequences and series, and vectors, with short units on differential equations, polar coordinates and complex numbers. MATH 127 does multivariable calculus (partial derivatives and multiple integrals), vector-valued functions and vector calculus through the Green, Gauss and Stokes Theorems. MATH 127 does not go into as much depth on vector calculus as MATH 223. MATH 121, 122 and 223 were taught for the last time in the 2015-16 academic year.

All three calculus courses are taught in the lecture-lab format with two choices of lecture time. The new courses are each four credits but continue to meet five times per week, three lectures

and two lab classes.

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## COMMON EXAMS AND COURSE COORDINATORS

- (a) The following statement applies to MATH 104, 115, 125, 126 and 127:

There will be two or three common exams, including the final. Each common midterm will be worth 200 points, and the final will be worth 300 points. MATH 104, 115 and 125/145 will have a gateway exam, worth 100 points. (An option is to count the gateway for 50 points.) The remaining points (out of 1000) will be awarded for homework and classwork such as participation, quizzes and in-class exams. Each semester one of the faculty teaching this course will be responsible for the administrative details of the common exams and any changes in the course syllabus. Each instructor will be provided with a detailed syllabus of the course, and copies of previous exams will be made available in the department office. The person in charge of the course will also be responsible for providing the junior members teaching the course with such assistance and guidance as may be appropriate. Instructors should meet early and regularly during the semester to coordinate teaching and to prepare the common exams.

- (b) Here are some detailed suggestions about how the policies embodied in the above statement should be implemented:

1. The coordinator should provide the instructors of the course with a detailed syllabus of the course. This syllabus should expand the general outline of the course given in the departmental handbook, but should be more complete. At a minimum it should provide the instructors teaching the course with section by section descriptions of what material to emphasize, what to omit, and what to add.
2. The coordinator should inform the instructors teaching the course of necessary administrative details of the course. At a minimum they should be reminded of the dates of the common exams and told of the policies the coordinator will follow concerning the composition, administration, and grading of the exams and the use of calculators, as well as the policy concerning makeups. Note that students in all of the courses are required to purchase graphing calculators.
3. It is suggested that the current course coordinator consult with previous course coordinators concerning operation of the course, construction of common exams, and other concerns of the course.
4. The gateway exams (in MATH 104, 115 and 125/145) test the student's competency in doing routine computations germane to the course. For each course there is a list of 100 or more such problems. The list is available to students on the web. Students must pass an exam consisting of ten problems chosen from the list in order to receive credit for the gateway exam. Students who do not pass are allowed to try again during specified periods. The gateway exam is administered in the computer lab in 159 Snow. The students will take the exams on the computer during scheduled times. The course coordinator is responsible for setting the dates during which students are allowed to take the gateway, and for deciding the number of points the exam is worth (usually either 50 or 100 points). The coordinator also decides whether the points from the gateway exam are added to the total points possible for the course or are

considered as part of the 200 points allotted to the common midterm exam. The course coordinator decides how many problems the student must do correctly in order to receive credit for passing the exam. Students who do not pass the exam during the allotted time period receive no credit. Students who pass receive full credit.

- (c) For 2020-21 the common exams for MATH 104, 115, 125, 126, 127, and 145, are scheduled as follows:

*FALL 2020*

**Special Exams 115**

Thursday, October 1, 5:50-7:50 p.m.  
Thursday, November 5, 5:50-7:50 p.m.

**Special Exams 104/126/146**

Wednesday, September 30, 5:50-7:50 p.m.  
Wednesday, November 4, 5:50-7:50 p.m.

**Special Exams 125/127/145/147**

Tuesday, September 29, 5:50-7:50 p.m.  
Tuesday, November 3, 5:50-7:50 p.m.

**Final Exams 104/115/125/126/127/145/146/147** Tuesday, December 10, 4:30-7:00 p.m.

*SPRING 2021*

**Midterm** Refer to Spring 2021 classes@ku.edu.

**Final** Refer to Spring 2021 Exams at [www.registrar.ku.edu/exams](http://www.registrar.ku.edu/exams).

Math 002 and 101 (KAP courses) will also give final exams at the above times. The final exams for all other courses are scheduled according to the days and times the class meets. See the Final Examination Schedule at [Enroll and Pay](#).

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## TEACHING EVALUATIONS

**Student evaluation of teaching is mandated by both the Board of Regents and by the KU Provost and is strongly supported by University Governance.** The Mathematics Department's main instrument for evaluation of teaching is the University Student Survey of Teaching and all departmental personnel teaching a course are required to use it. This document is used for the evaluation of GTA teaching and for faculty for documenting merit evaluation, promotion, tenure, and sabbatical. The Executive Committee wants to invite student comments. An additional form is included in your packet along with the student survey forms for the tenured/tenure-track faculty only.

**It is most important that in administering the survey you protect student confidentiality by asking a member of your class to conduct the survey and return the forms in the designated envelope to the Department Office.** You must leave the classroom while the survey is being completed. Sufficient time (no less than 15 minutes) is to be provided during the class session for students to complete the evaluation. No student will have the opportunity to complete a survey outside of the classroom.

You will be given a copy of each evaluation, along with any forms that have comments on them. A second copy of the evaluation will be addressed to the department chair.

Graduate teaching assistants are evaluated each year by the department. The evaluation will include a classroom visit by a faculty member, a self-evaluation and a departmental summary evaluation. Evaluation results will be filed with the Office of Human Resources.



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## INSTRUCTIONS FOR END OF SEMESTER FINALS AND GRADE REPORTS

- (a) The final examination schedule for each term is published at [www.registrar.ku.edu/exams](http://www.registrar.ku.edu/exams). Please note that you are expected to adhere to the published schedule and are **NOT** free to reschedule your final without the approval of the University Calendar Committee. Petitions to the committee must be submitted at least three weeks **before the last scheduled day of classes**. Students' academic best interests shall be the criteria for the Calendar Committee's decisions on petitions.

No examination may be scheduled during the last week of regularly scheduled classes unless a comprehensive final examination is given during the regularly scheduled final examination period. If an examination is the last work submitted in a course, then that examination shall be given during the regularly scheduled final examination period.

The Department expects that a comprehensive in-class final examination WILL be given in each of the lower division courses, and encourages them in all courses.

- (b) Final examinations should be retained by the instructor for at least one year. Students have the right to view their final exam, and may make an appointment with the instructor to do so, but should not take the exam away. Any instructor leaving employment in the Mathematics Department should leave the last year's final exams and all class record books or spreadsheets with the Department Office.
- (c) You will enter your final course grades online.

**EXERCISE THE GREATEST CARE TO SEE THAT THE CORRECT GRADE IS REPORTED.**

- (d) The university now posts the student's grades online at [www.grades.ku.edu](http://www.grades.ku.edu). Students must have a KU Online ID to access their grades.

**NOTE:** The University's General Counsel has informed us that **posting of grades by name, student number, or any other "personal identifier" is prohibited by the Buckley Amendment**. Instructors should take reasonable steps to insure that no student's grade or any work can be seen by other students. Setting out graded papers or finals in public, on doors, etc., for students to sort through is similarly prohibited.

- (e) **CHANGE OF GRADE:** Change of Grade is made online at Enroll & Pay. Change of Grade is used to correct grades which have been incorrectly reported, or to change a grade of I to a permanent letter grade.

University Senate regulations (Article II Section 3) governing grade changes are as follows:

*Unless the provisions of 2.3.2 obtain, no change in a grade shall be made after it is filed with the University Registrar except upon written request of the faculty member in charge of the course. The Registrar shall notify the chairperson of the department in which the course is given, with a copy to the originating faculty member. Such a change may be made only if (1) the original grade resulted from an error, or (2) the original letter was I or P or (3) due to sanctions imposed in the case of academic misconduct. In any of these cases, the change of letter shall not include the change to a W. For purposes of this provision, a written request includes the electronic request through online processes developed by the Registrar.*

*In the following exceptional cases a committee of at least three faculty members appointed by the chairperson of the department in which the course is given may review a student's work and assign the course grade:*

- 1. When a faculty member who has been charged with and found guilty of sexual harassment or academic misconduct has assigned a grade to the student who has pressed charges.*
- 2. When a clerical error is suspected in a course grade assigned by a faculty member who has become seriously ill and incapacitated or has died or whom the chairperson of the department in which the course is given cannot locate with due diligence.*
- 3. When a student is found guilty of academic misconduct after the course grade has been assigned by a faculty member who has become seriously ill and incapacitated or has died or whom the chairperson of the department in which the course is given cannot locate with due diligence.*
- 4. When there is procedural irregularity in the assignment of the course grade. However, in such a case, the grade shall be assigned in accordance with section 2.3.5.3 of the University Senate Rules and Regulations.*

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## CLASS ROSTERS

- (a) The official class rosters for the sections that you have been assigned to teach can be accessed and printed directly through the Enroll and Pay website. You will need a KU Online account. You can only access the class roster for which you are the instructor of record. See the Department Office for instructions.
- (b) The official class rosters are prepared from information supplied by the student at enrollment time and contain the following information:

Year and Semester

Department

Number and title of the course

Time the class meets (hour and days)

Place the class meets (room and building)

Name of the Instructor

Line Number of the Class

Name, Student Number, School, Major, Email Address, Enrollment Data, Photograph, and credit for each student enrolled in the section.

Please note that in any correspondence or reports concerning a student in one of your courses, the definitive identifier of the student is the student number and that of the course (section) is the line number.

- (c) The class roster lists the names of all students who are officially enrolled in your course as of that date. Students who are attending your class but who are not listed on the class roster should be sent to the enrollment center to clear up their enrollment problems. **Do not accept any written work from students unless you have documentary evidence that they are enrolled in your section.** You can check your rosters online at any time for up-to-date information.

If a student's name appears on the class roster but the student has stopped attending class (or has never attended), report that fact to the student's school on an Academic Warning Report Form, which is available in the Department Office. Also, record on the roster the date the form was sent in. Retain all class rosters.

- (d) Please do your best to see that the correspondence between those students actually attending your class and those officially enrolled is one-to-one. The sooner an enrollment problem is identified the easier it is to solve.

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## CLASS RECORD BOOK

- (a) Each instructor should keep a Class Record (spreadsheet or other record), containing a permanent record for each student in each course section for the academic year. At the end of the semester the Class Record should contain the following information for each section and each student enrolled in it.

Course number, title, term, and line number.

Student name, number, school and class.

Attendance information (see section on Attendance).

Grades on written work, including tests.

Grade in course.

Copy of the syllabus, including the policy for determining final grades.

The Class Record should be kept in such a way that it is understandable to others.

Students frequently inquire about their grades after instructors have left the University.

- (b) If you have assigned a grade of I (incomplete) to a student, turn in an explanation of the grade, including plan for completion and default grade, to the Department Office.
- (c) The final exams should be saved for at least one year. All student papers, including homework papers not returned to the student, should be saved for one year.
- (d) When exams or other student papers no longer need to be saved, dispose of them in the security shredder boxes in the Department Office.
- (e) The Department archives Class Records. **At the end of your employment, turn in remaining Class Records and student papers to the Department Office.**

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## ENFORCED PREREQUISITES IN BEGINNING AND SECOND-LEVEL MATHEMATICS COURSES

The prerequisites in all 100-level math courses, except MATH 103, and in MATH 365 are strictly enforced. Students enrolled in these courses will be administratively disenrolled unless their records indicate that they have satisfied the listed prerequisites for the course.

Students who believe their records are incomplete or in error should provide documentation to the Admissions Office, located in the KU Visitors Center, before the first day of classes. Do not accept any work from students who have been disenrolled or give them permission to attend the class with the hope of adding later.

Students may also demonstrate their preparedness for any of these courses by earning an appropriate score on the Mathematics Placement Examination. Information about this examination and online registration can be found at <http://mathematics.ku.edu/placement-exam>.

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## SECTION TRANSFERS AND ENROLLMENT CHANGES

- (a) Students can make enrollment changes through Enroll and Pay in the first week of classes. Students who add your course will have a class printout showing they are enrolled in your class. Their names should appear on your online class roster. You should check your online roster daily during the first week of classes. **Do not add any names to your class roster unless you have seen a corresponding enrollment printout.** *Be sure to check the course line number on the printout.* Students with enrollment problems should be sent to the Enrollment and Financial Aid Services, 121 Strong Hall. **Do not sign Schedule Change Forms for students.**
- (b) Students are not normally allowed to add or change sections in a math course after the first week of the semester (August 28 is the last day to add or change sections online for Fall 2020). Exceptions to this rule are:
- i. Students wishing to enroll in classes numbered 320 and above who have the written permission of the instructor.
  - ii. Students who receive written permission from the Associate Chair of the Department or, for KAP courses, the KAP Director.
- (c) Students can drop courses online through Enroll & Pay through the end of the third week of the semester (by September 11 for Fall 2020). In this case the course is removed from the student's record.

Students can withdraw from courses online through Enroll and Pay during weeks four through twelve (September 12 through November 13 for Fall 2020). In this case the course stays on the student's record with a grade of W. The grade of W is not included in the student's GPA.

Deadlines for each semester are available at <http://www.registrar.ku.edu/calendar>.

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## ATTENDANCE

- (a) The University leaves it up to the instructor whether to require attendance in class. You should arrange make-up work for students who have a documented illness that prevents them from completing the work on time. In addition, the University rules include the following.

### USRR1.4.4

*Students with a verifiable medical crisis of a relative or friend may be excused from being present for scheduled examinations and tests. It is the responsibility of the student to initiate discussion with the instructor, prior to the examination/test if possible. The instructor and student shall come to a mutually agreeable method of making up the missed work.*

### USRR 2.1.4

*In cases where part of a class grade is based on attendance, a student shall not be penalized for absence from regularly scheduled class activities which conflict with mandated religious observances. In cases of conflicts between regularly scheduled class activities and mandated religious observances, the student is responsible for initiating discussion with the instructor to reach a mutually acceptable solution.*

- (b) Students whose names appear on your roster but who never show up or who "disappear" at some point in the semester may mistakenly think they have dropped the course. In such cases a promptly submitted Academic Warning Report (or email to student) can save a lot of hassle at the end of the semester.

Try to record an approximate last date of attendance for a student who stops attending. The financial aid office may ask for that information after the semester ends, to determine whether the individual was an active KU student.

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## GRADING SYSTEM FOR UNDERGRADUATE SCHOOLS

- (a) The regulations of the University Senate prescribe and describe the grades to be used in all but the post-baccalaureate schools as follows:

A will be reported for achievement of outstanding quality.

B will be reported for achievement of high quality.

C will be reported for achievement of acceptable quality.

D will be reported for achievement that is minimally passing, but at less than acceptable quality.

F Shall indicate that the quality of work was such that, to obtain credit, the student must repeat the regular work of the course.

+/- Beginning with the Fall 2008 semester, the College of Liberal Arts and Sciences adopted the use of +/- grading. Grades of A-, B+, B-, C+, C-, D+, D- (but not A+). Each + grade counts .3 grade points more than the undecorated grade; each - grade .3 less. The department policy (approved October 2015) is that the final grades of MATH 115, 116, 125, 126 and 127 will be undecorated (no +/-). The department does not have a uniform policy on the use of +/- grading in other courses. All instructors should indicate their grading policy clearly on the course syllabus.

I Shall indicate "incomplete work" such as may be completed without re-enrollment in the course. The letter I should not be used when a definite grade can be assigned for the work done. It shall not be given for the work of a student in any course except to indicate that some part of the work has, for reasons beyond the student's control, not been done, while the rest has been satisfactorily completed. At the time an I is reported on the electronic roster, the character and amount of work needed, as well as the date required for completion and lapse grade if further work is not completed by this date, should be indicated.

A student who has an I posted for a course must make up the work by the date determined by the instructor, in consultation with the student, which may not exceed one calendar year, or the last day of the term of graduation, whichever comes first. An I not removed according to this rule shall automatically convert to a grade of F or U, or the lapse grade assigned by the course instructor, and shall be indicated on the student's record.

Comments on Incompletes:

- (1) In mathematics courses the most usual situation in which an incomplete is appropriate is the case of a student who has done passing work throughout the semester but who, for some good reason, does not take the final exam. Other situations can usually be handled more appropriately without an incomplete. For example, missed hour examinations can be made up before the end of the semester; students who miss substantial amounts of class time because of illness or family problems can withdraw; etc. **Note that an incomplete cannot be given to a student who is failing the course.**
- (2) An instructor who awards a grade of I assumes the responsibility for providing the student with a reasonable way of making up the missed work; e.g., the instructor may give the student a make-up exam or arrange with a colleague for the student to take the colleague's exam. The instructor should fill out the Incomplete Comments section on the grade roster and also give the student a written statement specifying how and by when the grade is to be made up. He or she should also make absolutely sure that the student understands the terms of the incomplete. **Note that a student cannot make up the incomplete by enrolling in the course the next semester, or by repeating the whole course without enrolling.**

W Shall indicate withdrawal, for which no credit or grade point is assigned.

- (b) A student in the College may, between the 21<sup>st</sup> and 30<sup>th</sup> instructional day of the semester, select one of his or her courses (not in the major) to be taken under the CREDIT/NO CREDIT option. This choice is made by filling out a CREDIT/NO CREDIT option form at the Office of his or her school. The instructor is not informed of any such selection but grades each student according to the system in (a) above. When grades are posted by the Office of Student Records, grades of A, B, and C are recorded as Credit (Cr.) while grades of D and F are recorded as No Credit (NCr.).

Students in Engineering may not enroll in mathematics courses CREDIT/NO CREDIT. Other students outside the College should check their school's policy. Students cannot use the CREDIT/NO CREDIT option for classes in their major or minor.

- (c) Grade Replacement Policy in Repeat Courses. If a student takes a course at KU, receives a D or F in the course, enrolls in and repeats the course at KU, the new grade may be used in place of the original grade for purpose of GPA calculation, subject to the limitations herein.
  - i. The course must be numbered 000-299 and have been taken in the Fall 2001 semester or thereafter. Classes taken from Fall 2001 through Summer 2007 must have been requested by the student during the semester as qualifying for the repeat policy. Beginning in Fall 2007, this policy automatically applies to classes that meet the criteria outlined in this section.
  - ii. The grade of D or F cannot be the result of an academic misconduct

determination.

- iii. The grade recalculation will happen by default.
- iv. The original grade will remain on the transcript, although it will not be used to calculate the GPA.
- v. Students may have a grade replaced no more than five times, meaning a student may retake five courses, or a course five times, or any combination thereof. Multiple retakes of a course are discouraged, but not explicitly prohibited. The time and date of registration of the second (repeat) enrollment will be used to determine the limit of five repeat courses for grade replacement.

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## GRADING SYSTEM FOR THE GRADUATE SCHOOL

The basic grading system in the Graduate School is an A, B, C, D, F system, where A designates above-average graduate work; B average graduate work; C passing but not average work; D and F failing graduate work. (C-, D and F work does not, of course, count toward a degree.)

Certain designated courses e.g., Math. 990 (Seminar) and Math 993 (Readings in Mathematics) may be graded S or U.

The I grade is not appropriate for enrollment in thesis, dissertation and research. The letter I is used to indicate course work that has been of passing quality, some part of which is, for good reason, unfinished. All grades of I for a graduate course will remain unchanged on the student's record, except that should the student subsequently complete the course work the instructor will then change the I to a letter grade; i.e., A, B, C, D, or F. No graduate student will be allowed to take oral comprehensive exams if an I grade is currently listed on the student's transcript.

In the Graduate School grading system defined above, at least a B average is required on coursework counted toward any of the master's degrees or the Specialist in Education degree at The University of Kansas. Coursework counted toward a doctorate, including that for a master's degree if obtained at The University of Kansas, should average better than a B. Courses graded S or I are excluded from the computation of the average.

Upon falling below a cumulative graduate grade point average of B computed in the manner described above, the student shall be placed on probation. At the end of his or her next semester of enrollment the student's overall graduate average must be raised to B (in which case the student is returned to regular status) or a departmental recommendation will be required for the student to continue in his or her program of graduate study. If a student is admitted on probation, his or her overall graduate average during the first semester of enrollment must be at least a B (in which case the student is returned to regular status) or a departmental recommendation will be required for the student to continue in his or her program of graduate study.

Performance shall be graded "Honors," "Satisfactory," or "Unsatisfactory" for the following examinations:

1. The general examination for the master's degree.
2. The general examination for the degree of Specialist in Education.
3. The comprehensive oral examination for the doctorate.
4. The final examination for the doctorate.

## GRADUATE STUDENT COURSE WITHDRAWAL:

Graduate students follow the same procedure as undergraduates to withdraw from a course. See **Section Transfers and Enrollment Changes**. However, every Graduate Teaching Assistant must be enrolled in 6 credit hours during the semester. Graduate students who are not GTAs must be enrolled in at least 9 credits to be considered a full-time student.

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## ACADEMIC MISCONDUCT GENERALLY

From University Senate Rules and Regulations, Article 2, Section 6:

- (a) Academic misconduct by a student shall include, but not be limited to, disruption of classes; threatening an instructor or fellow student in an academic setting; giving or receiving of unauthorized aid on examinations or in the preparation of notebooks, themes, reports or other assignments; knowingly misrepresenting the source of any academic work; unauthorized changing of grades; unauthorized use of University approvals or forging of signatures; falsification of research results; plagiarizing of another's work; violation of regulations of ethical codes for the treatment of human and animal subjects; or otherwise acting dishonestly in research.  

Academic misconduct by an instructor shall include, but not be limited to, grading student work by criteria other than academic performance; willful neglect in the discharge of teaching duties; falsification of research results; plagiarizing of another's work; violation of regulations or ethical codes for the treatment of human and animal subjects; or otherwise acting dishonestly in research.
- (b) After consultation with the department chairperson, an instructor may, with due notice to the student, treat as unsatisfactory (1) any student work that is a product of academic misconduct, or (2) a student's performance for a course when there are severe or repeated instances of academic misconduct as defined in Section 2.6.1. If an instructor deems other sanctions for academic misconduct by a student to be advisable, or if a student wishes to protest a grade based upon work judged by an instructor to be a product of academic misconduct, or if a faculty member is charged with academic misconduct in connection with the assignment of a grade or otherwise, the case shall be reported to the Dean of the College or School in which the course is offered and processed in accord with applicable procedures.
- (c) If either party to a charge of academic misconduct or to a grade appeal involving a charge of academic misconduct is dissatisfied with the unit level resolution of the charge, he or she may seek review by the Judicial Board in accordance with applicable procedures.
- (d) Every instructor shall make clear, at the beginning of each course, his or her rules for the preparation of classroom assignments, collateral reading, notebooks, or other outside work, in order that his or her students may not, through ignorance, subject themselves to the charge of academic misconduct. An instructor has the authority to set reasonable rules for classroom conduct. When an instructor judges that a student's behavior is disruptive or obstructive to learning, the instructor can request that the student leave the classroom. Refusal to comply with a request to leave a classroom can itself be grounds for a charge of academic misconduct.
- (e) Should charges of academic misconduct by an instructor be filed with the Department of Mathematics, the Chairman will decide whether or not the charged actions fall within the



prohibitions specified by Article V of the Faculty Code of Conduct. If so, the complaint will be referred to the Vice-Provost for Academic Affairs. Otherwise the complaint will be handled according to Departmental Grievance Procedures. A "Charge of Academic Misconduct" form can be obtained in the Department Office.

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## INSTRUCTOR ACADEMIC MISCONDUCT

The following sanctions (Section 2.6.5 of USRR) may be imposed upon an instructor for academic misconduct:

1. **Admonition:** An oral statement that his or her present actions constitute academic misconduct.
2. **Warning:** An oral or written statement that continuation or repetition, within a stated period, of actions that constitute academic misconduct may be the cause for a more severe disciplinary sanction.
3. **Censure:** A written reprimand for actions that constitute academic misconduct. Censure may include a written warning.
4. **Recommendation of Suspension:** Recommendation to the Chancellor that an instructor be excluded from teaching and other specified privileges or activities for a definite period not to exceed two years.
5. **Recommendation of Dismissal:** Recommendation to the Chancellor that an instructor be dismissed from the University staff for an indefinite period.

More than one sanction may be imposed upon an instructor for the same offense or offenses.

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## STUDENT ACADEMIC MISCONDUCT

An instructor who determines that academic misconduct has occurred must go through the official procedures for reporting such misconduct. An instructor must never impose a sanction without going through these procedures. It is important to report officially every incident of academic misconduct, so that any "repeat offender" is identified and sanctioned appropriately.

The following policies are summaries from Article 2, Section 6 of the University Senate Rules and Regulations (October 2007) and the College Regulations concerning student academic misconduct (April 2009).

When an instructor determines that a student has violated academic integrity as described in the preceding section, the instructor may charge the student with academic misconduct. The following sanctions may be imposed:

1. **Admonition:** An oral statement that his or her present actions constitute academic misconduct.
2. **Warning:** An oral or written statement that continuation or repetition, within a stated period, of actions which constitute academic misconduct may be the cause for a more severe disciplinary sanction.
3. **Censure:** A written reprimand for actions which constitute academic misconduct. Censure may include a written warning.
4. **Reduction of Grade for Specific Work:** Treating as unsatisfactory any work that is a product of academic misconduct. Reduction of grade may include the assignment of an F

for that specific work.

5. Reduction of Grade for the Course: Reduction of grade may include the assignment of an F in the course.
6. Exclusion from Activities: Exclusion from participation in specified privileged or extracurricular activities for a period not exceeding one school year.
7. Transcript Citation for Academic Misconduct: The student's transcript will state that the student has been cited for academic misconduct. This sanction will include a determination of the final grade in the course. This grade may be an "F". The statement will be permanent unless the student applies to the University Provost for removal of the statement and the application is granted.
8. Suspension from a Specific Course: An instructor may suspend a student from the instructor's section of a course for academic misconduct. In cases involving physical violence or disruptive behavior, the suspension should occur immediately. In cases where a physical threat is made, the suspension should be reported to the KU Police Department. During suspension, a student is not permitted to withdraw, pending decision by the hearing committee. A suspended student may complete work for the course only if reinstated. Conditions for re-instatement to the course shall be stated by the instructor at the time of the suspension. These initial conditions are subject to review by the hearing committee. When suspending a student, the instructor shall, before the next meeting of the course, inform the chairperson of the department in which this course is offered. The department chairperson shall notify the student in person or by certified mail (postmarked on or before the day of the next class meeting) of the opportunity to be heard on the suspension. The department chairperson shall also inform the Vice Provost for Student Success and other appropriate offices according to guidelines of the academic unit involved. If the student requests a hearing, the appropriate procedures (See Section 2.6.2) of the School or College, or at the department level where feasible, shall be initiated within five working days. The suspension will remain in effect pending review. Because this sanction places an immediate burden upon the suspended student, the department is obligated to act promptly. Options in such review include: reassignment of the student to another section of the course; reinstatement of the student into the course; upholding the suspension. In case of suspension through the end of the semester, a grade will be assigned by the instructor, subject to review by the hearing committee.
9. Suspension: Immediate exclusion from all courses and other specified privileges or activities for a definite period not to exceed two years subject to review by the hearing committee. The student's transcript will state that the student is suspended for academic misconduct. The statement will be permanent unless the student applies to the University Provost for removal of the statement and the application is granted.
10. Expulsion: Termination of student status for an indefinite period. The conditions of readmission, if any, shall be stated in the order of expulsion. The student's transcript will state that the student is expelled for academic misconduct. The statement will be permanent unless the student applies to the University Provost for removal of the statement and the application is granted.

All sanctions that are applied by the College and the Schools or their designated departments will be communicated to the Office of the Provost.

More than one sanction may be imposed upon a student for the same offense or offenses.

#### Imposition of Sanctions

1. The sanctions Admonition, Warning, and Censure may be imposed by the instructor alone.
2. All sanctions of Reduction of Grade for Specific Work, Reduction of Grade for the Course, Exclusion from Activities, Transcript Citation for Academic Misconduct, Suspension for a Specific Course, Suspension, and Expulsion that are applied by the College and the Schools or their designated departments will be communicated to the Office of the Provost.
3. Censure and Reduction of Grade for Specific Work. The instructor may administer these sanctions by informing the student in writing, of the charge and the penalty imposed, and informing the student of the right to appeal. The instructor should consult with the department chairperson.
4. Suspension from a Specific Course. The student's appeal will be heard through College academic misconduct proceedings. The hearing panel will consist of one faculty member within the division, one associate dean, and the assistant dean of the Student Academic Services Office or his/her representative. This hearing will be scheduled promptly after the instructor suspends the student from the class. If the suspension is upheld, the student's final grade is subject to review by the hearing committee.
5. Reduction of Grade for the Course, e.g., awarding an F for the course even though the work not involved in academic misconduct was adequate for the student to receive a passing grade), Exclusion from Activities, Transcript Citation, Suspension, and Expulsion. If the student is charged with multiple offenses of academic misconduct, or if the instructor and chairperson determine that the severity of the misconduct warrants a more serious sanction, a detailed report of the offense shall be forwarded to the Dean of the College within ten working days from the date of the charges. A recommendation of Sanctions may be included in the report. The dean will appoint a hearing panel consisting of three faculty members to conduct a hearing for all parties involved. This hearing shall be scheduled as soon as possible after required notification has been received. The hearing panel, having heard the charges and the student's response, will determine the validity of the charge of academic misconduct. If the student is determined to have committed an act of academic misconduct, the panel will determine which of the above sanctions are to be imposed, based on the severity of the offense and records of previous incidents of academic misconduct. The panel will notify the Dean of its decision.

#### Appeals

If the student desires to appeal a decision by the instructor, the student may appeal through the department or College grievance procedures. Sanctions 5, 6, 7, or 8 may be appealed through the Judicial Board, in accordance with University Senate Rules and Regulations, Article II, Section 6, 2.6.3.

## Records

For sanctions Admonitions and Warning, the instructor must inform both the student and the instructor's department chairperson of the charge by use of a "Charge of Academic Misconduct" form provided by the College Office. If it is not possible to give the form to the student in person, the form shall be sent by certified mail to the student no later than five working days from the date of the charge. Included on the form is the instructor's recommendation for an appropriate sanction to be imposed. Upon receipt of the Charge of Academic Misconduct, the student shall indicate in writing, on a portion of the form designated for this purpose, his or her agreement or disagreement with the charge. The student will return the form to the departmental office. The student will have five days from the receipt of the form to respond to the charge. Failure to return the form will indicate agreement with the charge.

When the sanctions of Censure, Reduction of Grade for Specific Work, Reduction of Grade in the Course, Exclusion from Activities, Transcript Citation, Suspension, or Expulsion have been imposed, a copy of the Charge of Academic Misconduct form will be retained in the departmental office and in the Office of the College of Liberal Arts and Sciences.

If the student is not in the College of Liberal Arts and Sciences, the form will be sent to the Dean of the appropriate school. Another copy will be sent to the Office of Academic Affairs. The Charge of Academic Misconduct form will be removed from University files upon reversal of the action through the appeal process. If the action is not reversed through the appeal process, the form will remain in the files for five years after imposition of the sanction or three years after graduation, whichever comes first unless the hearing panel sets a different date.

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## DEPARTMENTAL ACADEMIC MISCONDUCT HEARING PROCEDURES

Student notification of a hearing occurs at least 15 days prior to the hearing date.

The associate chair of the Mathematics Department will appoint a three-person faculty committee (hereinafter "the Hearing Committee"), selected from the current members of the Faculty to consider the charge. The Hearing Committee members shall be disinterested parties who have not had previous involvement in the specific situation forming the basis of the charge.

Individuals attending the hearing will be kept to a minimum to insure the confidentiality of the proceedings. In addition to themselves, the charged student and/or charging instructor may request that an observer/advisor or witness(es) attend the hearing. The Mathematics Department chair (or designate) must be notified in writing 10 calendar days prior to the hearing of any observer/advisor and/or witness(es) that will be attending the hearing. An observer/advisor (a supportive family member or friend) may not directly participate in the hearing. Witnesses may be present only during their testimony to respond to questions from the panel, charged student, or charging instructor(s).

Typically, students do not bring legal counsel. However, if the student wishes to bring an attorney, University General Counsel will be contacted and asked to attend the hearing also. The hearing may be delayed until such time as all parties, including legal representatives from both sides, can attend.

The following will be the routine procedure for hearings and may be modified at the discretion of the hearing panel:

1. The Mathematics Department associate chair (or designate) meets briefly with the hearing panel members to go over procedure, to review the individuals that will be

observing or participating in the hearing and to instruct the panel to select a chair. The panel chair moderates the hearing and is responsible for reporting verbal outcomes of the hearing followed by written notification to all relevant parties.

2. The Mathematics Department associate chair (or designate) then:
  - Asks the others (i.e. charged student, instructor(s), etc.) to join the panel;
  - Turns on audio recorder;
  - Notes the day, time, and misconduct case to be reviewed;
  - Describes the faculty panel representation;
  - Asks for introductions;
  - Reminds all attendees that the hearing will be recorded;
  - Asks the student if he/she received the information on student rights and responsibilities; and
  - Outlines the hearing procedure:
    - The instructor describes what happened. Witnesses can be called. Each witness can be questioned by opposing party and/or panel members.
    - The student describes what happened. Witnesses can be called. Each witness can be questioned by opposing party and/or panel members.
    - The student and faculty may offer information about mitigating circumstances, and at this time opposing parties have the right to ask questions of each other. The hearing panel may also ask any remaining questions.
3. The Mathematics Department associate chair (or designate) conducts the hearing process as outlined. Asks if the other panel members have questions for either the instructor or the student. If requested, allows final comments by the instructor and the student, and asks everyone (except panel and Mathematics Department associate chair) to adjourn to another room while the panel deliberates. The audio recorder is turned off at this point.
4. The panel reaches a decision as to whether or not the student has committed academic misconduct. If the panel finds academic misconduct, the panel then decides on a sanction, which may or may not be the same as the sanction recommended by the faculty member.
5. The Mathematics Department associate chair (or designate) asks the parties to rejoin the panel. The audio recorder is turned back on.
6. The panel chair informs the parties of the panel's decision, and informs the student that a letter will be sent to the College regarding the panel's decision, with copies going to all parties involved.
7. The panel chair comments on the seriousness of any academic misconduct, and if academic misconduct occurs again that the sanctions can be more severe.
8. The Mathematics Department associate chair (or designate) informs the student of the right to appeal through the Judicial Board (within 30 calendar days), and also of the student's right to obtain a copy of the recording of the hearing.

9. If sanctions include Reduction of Grade for the Course, the charging instructor will complete a Change of Grade Card to record the appropriate grade.
10. The hearing is adjourned.
11. The Mathematics Department associate chair (or designate):
  - a. Documents the results of the hearing on the College Academic Misconduct Form (bottom portion).
  - b. Prepares written notification of hearing outcomes.
  - c. Confirms that the Change of Grade Form indicates that the change is a result of academic misconduct and submits the form to the University Registrar.
  - d. Forwards the completed file to College, Strong Hall Room 109. Files includes: Academic Misconduct Form (original), evidence reviewed in the case, and final correspondence of the case.
  - e. Holds the audio recording for sixty days following the decision of the hearing and makes it available in the event of an appeal.

## PART 4: DEPARTMENTAL POLICY ON INSTRUCTOR ABSENCES FROM CLASSES

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The Faculty Code of Rights, Responsibilities and Conduct states the following: "If prevented from meeting classes or carrying out other academic responsibilities, a faculty member must, if physically able to do so, make satisfactory advance arrangements and communicate, preferably in writing, the nature of these arrangements to his/her chairperson.(or dean, if the school in question is not organized departmentally). Such arrangements are subject to the approval of the appropriate chairperson or dean." The Dean of the College has asked each department to develop a policy stating what arrangements are satisfactory to cover missed classes. The Mathematics Department policy given below applies to all instructors, including senior faculty, lecturers and graduate teaching assistants.

All instructors in the department have an obligation to their students to meet classes as scheduled. However, there are times when circumstances, such as other duties or illness, make it necessary for an instructor to miss scheduled classes. In such cases the following rules should be observed:

1. If unable to meet a scheduled class, the instructor should make advance arrangements for another instructor to teach the class. **At the beginning of each semester, GTAs and Lecturers should submit online a Substitute Instructor form. The Department Office will send notification with a link. It is the instructor's responsibility to contact the substitute should the instructor be unable to meet a scheduled class.**
2. For upper-level or large lecture classes taught by senior faculty, if someone other than another Mathematics Department senior faculty member is selected to teach a missed class, then prior approval should be obtained from the Chairman or Associate Chairman of the Mathematics Department.
3. For lower-level classes, if someone other than another Mathematics Department graduate teaching assistant, lecturer or senior faculty member is selected to teach a missed class, then prior approval should be obtained from the Chairman or Associate Chairman of the Mathematics Department.
4. A class may be cancelled if suitable arrangements are made to reschedule the class at a time that is acceptable to all the students. Such arrangements will not be easy for large classes.
5. Instructors should inform the Mathematics Department of the plans that have been made to cover classes that they are unable to meet. Such plans should be reported at Travel and Instructor Substitution Reporting located on the department's web page under Local Users, <https://www.math.ku.edu/cgi/travel-reporting/index.html>. The information supplied should include a list of the classes affected, the name(s) of the person(s) covering the classes, the period of absence from teaching duties, and an address where the absent instructor may be reached (if away from campus).
6. In emergency situations (such as sudden illness), the department should be notified as quickly as possible so that arrangements can be made to either cancel the affected classes or have someone else teach them. The instructor involved should then comply with the above rules as soon as is reasonably possible.

## **PART 5: DEPARTMENTAL GRIEVANCE PROCEDURE**

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Pursuant to Article XII of the University Senate Code and Articles V and VI of the University Senate Rules and Regulations of The University of Kansas, the Department of Mathematics establishes the following procedure to hear grievances arising within the Department of Mathematics. Grievances arising within the Department of Mathematics must be heard under these procedures unless exceptional circumstances, as determined by the College of Liberal Arts and Sciences, make it more appropriate for those grievances to be heard at the College level. Appeal of a grievance heard at the Department level is to the Judicial Board. This procedure shall not be used to hear disputes assigned to other hearing bodies under USRR Article VI, Section 4.

For disputes involving alleged academic misconduct, see the College of Liberal Arts and Sciences' policy on academic misconduct. For alleged violations of student rights, the initial hearing normally will be at the Department level. There is an option to hold an initial hearing at the Judicial board level if both parties agree, or either party petitions the Judicial Board chair to have the hearing at the Judicial Board level and the petition is granted. The petition must state why a fair hearing cannot be obtained at the Department level; the opposing party has an opportunity to respond to the petition (USRR 6.4.3.1).

Except as provided in USRR 6.5.4, no person shall be disciplined for using the grievance procedure or assisting another in using the grievance procedure.

The Department Office shall provide a copy of this procedure to anyone who requests it.

1. To start the grievance process, the complainant must submit a written grievance to the Associate Chair (hereinafter the "Grievance Officer") of the Department of Mathematics. The complaint shall contain a statement of the facts underlying the complaint and specify the provision(s) of the Faculty Code of Conduct, University Senate Code, the University Senate Rules and Regulations, the Code of Student Rights and Responsibilities, or other applicable rule, policy, regulation, or law allegedly violated. The complaint shall also indicate the witnesses or other evidence relied on by the complaining party, and copies of any documents relevant to the complaint shall be attached to the complaint.
2. At the time the complaint is submitted to the Department, the complaining party shall provide a copy of the complaint, with accompanying documents, to the respondent(s).
3. Upon receipt of the complaint, the Grievance Officer shall contact the respondent to verify that the respondent has received a copy of the complaint and to provide the respondent with a copy of these procedures.
4. Pursuant to University Senate Code XII.2.IV, a respondent has the privilege of remaining silent and refusing to give evidence in response to a complaint. The respondent also has the right to respond and give evidence in response to the complaint.
5. If the respondent chooses to respond, the respondent shall submit a written response to the Grievance Officer within 14 calendar days of receiving the complaint. The response shall contain the respondent's statement of the facts underlying the dispute as well as any other defenses to the allegations in the complaint. The response shall also identify the witnesses or other evidence relied on by the respondent and shall include copies of any documents relevant to the response. The respondent shall provide a complete copy of the



response to the complaining party.

6. Upon receipt of the response, the Grievance Officer shall contact the complaining party to verify that a copy of the response has been provided.
7. Pursuant to USSR 6.8.4.2 the Grievance Officer may contact other hearing bodies within the University to determine whether a grievance or complaint involving the underlying occurrence or events is currently pending before or has been decided by any other hearing body.
8. Time limits. To use this procedure the complainant must file the written complaint with the Grievance Officer within six months from the action or event that forms the basis of the complaint. The six-month time period shall be calculated using calendar days (including weekends and days during which classes are not in session).
9. Upon receiving the complaint, if the Grievance Officer determines that any of the following grounds exist, he or she may recommend to the Chair of the Department that the complaint be dismissed without further proceedings. The grounds for such dismissal are: (a) the grievance or another grievance involving substantially the same underlying occurrence or events has already been, or is being, adjudicated by proper University procedures; (b) the grievance has not been filed in a timely fashion; (c) the Department lacks jurisdiction over the subject matter; (d) the grievance fails to allege a violation of a University rule; (e) the party filing the grievance lacks standing because he or she has not suffered a distinct injury as a result of the challenged conduct and has not been empowered to bring the complaint on behalf of the University; or (f) the party filing the grievance has been denied the right to file grievances pursuant to USRR 6.5.4.
10. If the Grievance Officer determines that a grievance on its face properly should be heard by another body, he or she will recommend that the Chair of the Department send the grievance to the appropriate hearing body without further proceedings in the Department. The Chair of the Department will send a copy of the referral to the complainant(s) and any responding parties.
11. Prior to scheduling a hearing, the parties shall participate in mediation of the dispute unless either party waives mediation. Mediation shall be governed by USRR 6.2.3.
12. If mediation is successful, the mediator will forward to the Chair of the Department, the Grievance Officer, and all parties a letter describing the outcome of the mediation and the terms upon which the parties have agreed to resolve the dispute. This letter shall be a recommendation to the Chair of the Department. The Chair of the Department shall notify the mediator, the Grievance Officer, and the parties that the recommendation has been accepted, modified, or rejected.
13. If mediation is not successful, the mediator will notify the chair of the Department, the Grievance Officer, and the parties that the mediation has terminated. If mediation is not successful, or if it is waived by either party, the Grievance Officer shall appoint a three person faculty committee (hereinafter "the Hearing Committee"), including a chair of the committee, selected from the current members of the Faculty to consider the complaint. The Hearing Committee members shall be disinterested parties who have not had previous involvement in the specific situation forming the basis of the complaint. The Hearing Committee will schedule a hearing no later than 30 calendar days from the written submission of the complaint. The 30-day period may be extended for good cause

as determined by the chair of the Hearing Committee. The 30-day period shall be suspended during the mediation process. The hearing will be closed unless all parties agree that it shall be made public.

14. Each party may represent himself or herself or be represented by an advisor or counsel of his or her choice.
15. Each party has the right to introduce all relevant testimony and documents if the documents have been provided with the complaint or response.
16. Each party shall be entitled to question the other party's witnesses. The committee may question all witnesses.
17. Witnesses other than parties shall leave the hearing room when they are not testifying.
18. The chair of the Hearing Committee shall have the right to place reasonable time limits on each party's presentation.
19. The chair of the Hearing Committee shall have the authority and responsibility to keep order, rule on questions of evidence and relevance, and shall possess other reasonable powers necessary for a fair and orderly hearing.
20. The hearing shall not be governed by the rules of evidence, but the chair of the committee may exclude information he or she deems irrelevant, unnecessary, or duplicative. Statements or admissions made as part of the mediation process are not admissible.
21. The Hearing Committee will make an audiotape of the hearing but not of the deliberations of the Committee. The audiotape will be available to the parties, their authorized representatives, the Hearing Committee, the Grievance Officer, and the Chair of the Department. If a party desires a copy of the audiotape or a transcript of the tape, that party will pay for the cost of such copy or transcript. In the event of an appeal, the audiotape will be provided to the appellate body as part of the record of the case.
22. After the presentation of evidence and arguments the committee will excuse the parties and deliberate. The Hearing Committee's decision will be a written recommendation to the Chair of the Department. The Hearing committee shall base its recommendations solely upon the information presented at the hearing.
23. The committee will send its written recommendation to the Chair of the Department, the Grievance Officer, and the parties as soon as possible and no later than 14 calendar days after the end of the hearing.
24. Within 14 calendar days of receiving the committee recommendation, the Chair of the Department will notify the parties of the acceptance, modification, or rejection of the recommendation. The Chair will advise the parties of the procedure available to appeal the decision.

## PART 6: DEPARTMENTAL GRADE APPEALS

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Pursuant to Article XII of the University Senate Code and Articles II, V, and VI of the University Senate Rules and Regulations of the University of Kansas, Lawrence, the Department of Mathematics establishes the following procedure to hear grade appeals arising within the Department of Mathematics. Grade appeals arising within the Department of Mathematics must be heard under these procedures unless exceptional circumstances, as determined by the College of Liberal Arts and Sciences, make it more appropriate for those grade appeals to be heard at the College level. Appeal of a grade appeal heard at the Department level is to the Judicial Board. The only grounds for a grade appeal is improper application of the grading procedure announced for the course by the instructor (USRR Articles 2.3.5 and 6.4.4). The grade appeal procedure shall not be used to hear disputes assigned to other hearing bodies under USRR Article VI, Section 4.

Except as provided in USRR 6.5.4, no person shall be disciplined for using the grade appeal procedure or assisting another in using the procedure.

The Department Office shall provide a copy of this procedure to anyone who requests it.

1. To start the grade appeal process, the complainant must submit a written appeal to the Associate Chair (hereinafter the "Grievance Officer") of the Department of Mathematics. The appeal shall contain a statement of the facts underlying the grade appeal and specify the provision(s) of the announced grading procedures alleged to have been improperly applied. The grade appeal shall also indicate the witnesses or other evidence relied on by the complaining party, and copies of any documents relevant to the appeal shall be attached to the appeal.
2. At the time the grade appeal is submitted to the Department, the appealing party shall provide a copy of the appeal, with accompanying documents, to the instructor(s).
3. Upon receipt of the grade appeal, the Grievance Officer shall contact the instructor to verify that the instructor has received a copy of the appeal and to provide the instructor with a copy of these procedures.
4. Pursuant to University Senate Code XII.2.IV, an instructor against whom a grade appeal is brought has the privilege of remaining silent and refusing to give evidence in response to the appeal. The instructor also has the right to respond and give evidence in response to the appeal.
5. If the instructor chooses to respond, the instructor shall submit a written response to the Grievance Officer within 14 calendar days of receiving the grade appeal. The response shall contain the instructor's statement of the facts underlying the dispute as well as any other defenses to the allegations in the appeal. The response shall also identify the witnesses or other evidence relied on by the instructor and shall include copies of any documents relevant to the response. The instructor shall provide a complete copy of the response to the complaining party, but the names of other students and their grades shall be redacted from the copy provided to the complaining party.
6. Upon receipt of the response, the Grievance Officer shall contact the complaining party to verify that a copy of the response has been provided.
7. Pursuant to USSR 6.8.4.2 the Grievance Officer may contact other hearing bodies within the University to determine whether a grievance or complaint involving the underlying

occurrence or events is currently pending before or has been decided by any other hearing body.

8. Time limits. To use this procedure the complainant must file the written grade appeal with the Grievance Officer within six months from the time the final grade in the course was assigned. The six-month time period shall be calculated using calendar days (including weekends and days during which classes are not in session). Under exceptional circumstances the Grievance Officer may waive the six-month limit.
9. Upon receiving the appeal, if the Grievance Officer determines that any of the following grounds exist, he or she may recommend to the Chair of the Department that the complaint be dismissed without further proceedings. The grounds for such dismissal are: (a) A grade appeal or a grievance involving substantially the same underlying occurrence or events has already been, or is being, adjudicated by proper University procedures; (b) the grade appeal has not been filed in a timely fashion; (c) the Department lacks jurisdiction over the subject matter; (d) the grade appeal fails to specify which grading procedures are alleged to have been improperly applied; (e) the party filing the grade appeal lacks standing because his or her grade in the course was not adversely affected by the alleged violation of grading procedures; or (f) the party filing the grade appeal has been denied the right to file grievances pursuant to USRR 6.5.4.
10. If the Grievance Officer determines that a grade appeal on its face properly should be heard by another body, he or she will recommend that the Chair of the Department send the grievance to the appropriate hearing body without further proceedings in the Department. The Chair of the Department will send a copy of the referral to the complainant(s) and any responding parties.
11. Prior to scheduling a hearing, the parties shall participate in mediation of the dispute unless either party waives mediation. Mediation shall be governed by USRR 6.2.3.
12. If mediation is successful, the mediator will forward to the Chair of the Department, the Grievance Officer, and all parties a letter describing the outcome of the mediation and the terms upon which the parties have agreed to resolve the dispute.
13. If mediation is not successful, the mediator will notify the Chair of the Department, the Grievance Officer, and the parties that the mediation has terminated. If mediation is not successful, or if it is waived by either party, the Grievance Officer shall appoint a three person faculty committee (hereinafter "the Hearing Committee"), including a chair of the committee, selected from the current members of the Faculty to consider the complaint. The Hearing Committee members shall be disinterested parties who have not had previous involvement in the specific situation forming the basis of the complaint. The Hearing Committee will schedule a hearing no later than 30 calendar days from the written submission of the complaint. The 30-day period may be extended for good cause as determined by the chair of the Hearing Committee. The 30-day period shall be suspended during the mediation process. The hearing will be closed unless all parties agree that it shall be made public.
14. Each party may represent himself or herself or be represented by an advisor or counsel of his or her choice.
15. Each party has the right to introduce all relevant testimony and documents if the documents have been provided with the grade appeal or response.

16. Each party shall be entitled to question the other party's witnesses. The committee may question all witnesses.
17. Witnesses other than parties shall leave the hearing room when they are not testifying.
18. The chair of the Hearing Committee shall have the right to place reasonable time limits on each party's presentation.
19. The chair of the Hearing Committee shall have the authority and responsibility to keep order, rule on questions of evidence and relevance, and shall possess other reasonable powers necessary for a fair and orderly hearing.
20. The hearing shall not be governed by the rules of evidence, but the chair of the committee may exclude information he or she deems irrelevant, unnecessary, or duplicative. Statements or admissions made as part of the mediation process are not admissible.
21. The Hearing Committee will make an audiotape of the hearing but not of the deliberations of the Committee. The audiotape will be available to the parties, their authorized representatives, the Hearing Committee, the Grievance Officer, and the Chair of the Department. If a party desires a copy of the audiotape or a transcript of the tape, that party will pay for the cost of such copy or transcript. In the event of an appeal, the audiotape will be provided to the appellate body as part of the record of the case.
22. After the presentation of evidence and arguments the committee will excuse the parties and deliberate. The Hearing Committee's decision will be a written recommendation to the Chair of the Department. The Hearing committee shall base its recommendations solely upon the information presented at the hearing.
23. The committee will send its written recommendation to the Chair of the Department, the Grievance Officer, and the parties as soon as possible and no later than 14 calendar days after the end of the hearing. The committee has no enforcement powers and does not command sanctions. If the instructor chooses to change the grade, a grade change shall be submitted.
24. Within 14 calendar days of receiving the committee recommendation, the Chair of the Department will notify the Grievance Officer, the committee, and the complainant of the instructor's decision concerning a change of grade. The Chair will advise the parties of the procedure available to appeal the decision.

## **PART 7: UNIVERSITY SEXUAL, RACIAL, AND ETHNIC HARASSMENT AND CONSENSUAL RELATIONSHIP POLICIES**

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The University will not tolerate behavior by members of the University community, whether students, faculty, or staff, which causes or contributes to unacceptable conditions in the educational environment or work place of the institution. Sexual harassment and conflicts of interest deriving from consensual relationships are two kinds of such behavior. Sexual harassment subverts the mission of the University and threatens the careers of students, faculty, and staff. Conflicts of interest produce grades and evaluations that may be suspect as to their fairness.

**To ensure University of Kansas students are aware of the nature of sexual harassment/sexual violence as well as how to prevent it and report it, the University of Kansas Lawrence and Edwards Campuses requires:**

- **All new and continuing KU undergraduate, graduate, and non-degree seeking students to annually complete an online training coordinated by the Sexual Assault Prevention and Education Center by the established completion date.**
- **Failure to complete the training will result in the placement of an enrollment hold on the student's record, thus prohibiting enrollment for future semesters at the University until the mandatory training is completed.**

### **Sexual Harassment**

All members of the Mathematics Department, including faculty, staff, and students should take care not to engage in any form of sexual harassment or in any conduct which could be perceived as sexual harassment.

From the University of Kansas Policy Concerning Sexual Harassment:

Sexual harassment is a violation of professional ethics as well as a violation of federal and state law. Specifically, sexual harassment is a form of illegal discrimination in violation of Title VII of the Civil Rights Act of 1964, Title IX of the Education Amendments of 1972, and the Kansas Acts Against Discrimination. University policy prohibits sexual harassment. The university does not tolerate such unprofessional and unethical behavior. Institutional policy defines sexual harassment as follows:

- (a) unwelcome sexual advances or
- (b) requests for sexual favors or
- (c) verbal or physical conduct of a sexual nature when
  - (i) submission to such conduct is made either explicitly or implicitly a term or condition of an individual's employment or education;
  - (ii) submission to or rejection of such conduct is used as the basis for employment or academic decisions affecting an individual; or
  - (iii) such conduct has the purpose or effect of unreasonably interfering with an individual's work or academic performance, or of creating an intimidating, hostile, or offensive working or educational environment.

Repeated or unwanted sexual attention or sexual advances are forms of sexual harassment. Students, faculty, or staff members should not be penalized in the evaluation of their academic or employment performance for refusing to accept unwanted sexual attention or advances as a condition for receiving awards. Sexual harassment occurs when acceptance of such attention is made a condition of reward, or of penalty, for employment or academic performance. Sexual harassment may occur when there is a power difference between the persons involved, as when a faculty member or supervisor exploits his or her relationship with students or subordinates. Sexual harassment may also occur between persons of the same university status, e.g., student to student, faculty member to faculty member, staff member to staff member, or between persons of the same sex.

Examples of verbal or physical conduct that are prohibited but are not limited to:

- (a) physical assault, including rape;
- (b) direct or implied threats or insuations that submission to sexual advances will be a condition of employment, work status, promotion, grades, or letters of recommendation;
- (c) direct or subtle pressure for sexual activity;
- (d) a pattern of conduct intended to humiliate or cause discomfort, or both, including:
  - i. unwelcome comments of a sexual nature;
  - ii. unwelcome sexually explicit statements, questions, jokes, gestures, or anecdotes;
  - iii. unwelcome propositions of a sexual nature;
  - iv. unwelcome touching, patting, hugging, or brushing against a person's body or clothing;
  - v. unwelcome remarks of a sexual nature including remarks about a person's body or clothing;
  - vi. unwelcome remarks about sexual activity;
  - vii. showing, exposing to, or subjecting others to materials or media of a sexual nature.

Copies of the complete University Policy on Sexual Harassment can be obtained through the Department Office.

### **Racial and Ethnic Harassment Policy**

The University of Kansas, Lawrence, is committed to programs and activities that are free of racial or ethnic discrimination and harassment. To carry out the mission of this institution, the university community must provide and maintain a working and learning environment that fosters respect among all members of the community. The university's goal is to provide an environment where individuals are free to develop intellectually, personally, professionally, and socially without intimidation or fear. Intimidation and harassment affect not only those who suffer the harassment but also the entire community. Racial and ethnic discrimination and harassment violate federal and state law, including Title VII of the Civil Rights Act of 1964 and the Kansas Acts Against Discrimination.

Racial and ethnic harassment at the University of Kansas, Lawrence, includes, but is not limited to, racially or ethnically motivated

1. Behavior or conduct addressed directly to an individual(s) that threatens violence or property damage, or incites imminent lawless action; or
2. Behavior or conduct that has the purpose or effect of creating an intimidating, hostile, or offensive work or educational environment for an individual or group; or
3. Behavior or conduct that has the purpose or effect of interfering with an individual's or group's work, academic performance, living environment, personal safety, or participation in a university-sponsored activity; or
4. Behavior or conduct that has the purpose or effect of threatening an individual's or group's employment or academic opportunities.

Copies of the complete University Policy on Racial and Ethnic Harassment can be obtained through the Department Office.

### **Consenting Relationships**

To maintain an institutional reputation for integrity, it is essential that grades, degrees, awards, promotions and performance evaluations be made on a basis free from any appearance of bias or conflict of interest. No person should serve in a decision-making role concerning the awarding of grades, degrees, promotions or awards where there is a possibility of or an appearance of a conflict of interest. A conflict may be presumed to exist when the person who is making the decision has an emotional relationship beyond a purely professional or academic one with a person affected by the decision. Examples of relationships that can cause conflicts include but are not limited to: spouses, lovers, and sharing of living quarters.

Copies of the complete University Policy on Consenting Relationships can be obtained through the Department Office.



## PART 8: FACULTY PROCEDURES

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### DEPARTMENT STRUCTURE AND OPERATING PROCEDURES

(August 8, 2003: On file with University Governance)

The Mathematics Department operates according to long established and slowly evolving tradition. It does not have a written constitution or formally prescribed set of decision-making procedures. There is one bylaw: personnel decisions (hiring, termination, promotion and tenure) regarding professorial faculty are to be made by a three-fourths majority of the appropriate body of voting tenure-track faculty. (See the section below on professorial personnel decisions.) Otherwise the department follows procedures that have evolved throughout its history.

Most substantive decisions are made at meetings of the tenured/tenure-track faculty on recommendations proposed by the appropriate committee. However, when appropriate, committees are empowered to make decisions without consultation with the faculty as a whole. Examples are the admission of graduate students, hiring of student help, evaluation of teaching, awarding of scholarships, merit salary recommendations and many other delegated chores of the department. Whether or not a committee or administrative officer acts without directly consulting the chair and/or tenured/tenure-track faculty is a matter of judgment and tradition.

#### A. COMMITTEE ASSIGNMENTS AND DEPARTMENTAL ADMINISTRATIVE OFFICERS

The department chair appoints the departmental committees during the summer preceding each academic year. The membership of the committees and all administrative assignments are published each August in the Handbook of the Department of Mathematics. There is no committee to assign committees. The administrative offices and departmental standing committees are listed below.

##### Administrative Officers:

Chair  
Associate Chair  
Director of Graduate Studies  
Director of Graduate Admissions  
Director of Undergraduate Studies  
Scheduling Officer  
Coordinator of Kansas Algebra Program (KAP)  
Director of Mathematics Placement  
Ambassador to Center for Teaching Excellence  
Editor, Mathematics News (Alumni Newsletter)  
Editor, Mathematics Department's Home Page on WWW  
Editor, Mathematics Majors Newsletter

##### Committees (2020-2021):

Bylaws/Faculty Evaluation Plan Review  
Colloquium  
Computer Advisory  
CTE Ambassadors  
Endowment

Engineering Liaison  
 Evaluation of Teaching and GTA Training  
     Teaching Awards  
     Teaching Mentors  
 Executive Committee  
 Graduate Studies  
 Library  
 Math Awareness and Outreach  
 Mathematics Competitions  
 Mathematics Distinguished Lecture Series  
 Nominating  
 Progress Towards Tenure Review  
 Post Tenure Review  
 Promotion and Tenure  
 Recruiting (has a student member)  
 Sabbatical  
 Task Force for Service Courses  
 Teaching Faculty Evaluation  
 Undergraduate Studies:  
     Upper Division/Majors  
     Lower Division  
     Honors  
     Mathematics Education  
     Transfer Credit Evaluation  
     Panels for Academic Misconduct  
 Wells-Morrison

**B. THE HANDBOOK OF THE DEPARTMENT OF MATHEMATICS**

This document, published each summer contains:

1. Mission statement of the department.
2. Senior staff listing and administrative and committee assignments.
3. Calendars for the university and College graduate division.
4. Departmental business procedures.
5. Departmental policy on record retention and disposal of private information.
6. Advising information.
7. Departmental teaching procedures.
8. Departmental policy on instructor absences.
9. Departmental grievance procedures.
10. Departmental grade appeals procedures.
11. Sexual, racial, and ethnic harassment and consensual relationships policies.
12. Faculty procedures.

13. Advanced degree requirements.

#### C. PROFESSIONAL PERSONNEL DECISIONS

The department has two classes of professorial faculty: tenure track and term. Tenure-track faculty (whose appointments are called probationary by the university) are what the name implies. Term appointments are made for one year at a time and are not tenure eligible. They are made for visiting professors or at the assistant professor level for new or almost new Ph.D.s. Term *visiting* assistant professors (dubbed *VAPs*) are appointed for up to three years. Usually the department expresses its commitment to *VAPs* for either two or three one-year appointments, but their reappointment is required by the College and the university to be conditioned on the availability of funds.

Decisions to hire and salary offers for both tenure track faculty and *VAPs* are made by a three-fourths majority of the voting tenure-track faculty on recommendations made by the departmental recruiting committee. In recent years each spring this committee has proposed, and the faculty have decided on, recruiting priorities for the coming recruiting season. Then in the following year the new recruiting committee oversees the recruiting process, consulting at each step with the faculty on such questions as whom to interview and finally to whom to make offers.

#### D. PROMOTION AND TENURE DECISIONS

Late in each spring semester the departmental executive committee reviews the faculty in the assistant and associate professor ranks to determine who should be considered for promotion in the fall of the following year. The decision to evaluate a candidate for nomination to associate professorship, professorship, or tenure is made by the faculty with those ranks and/or tenure status, on the recommendation of the promotion and tenure committee. The concerned faculty member is also consulted about his/her readiness for promotion.

During the summer after it is agreed that a faculty member should be evaluated for promotion, requests for peer evaluations of the candidate's research are sent to six experts in his/her research field. These peer reviewers are to be internationally known experts from schools other than KU.

In the following fall, the promotion and tenure committee evaluates all the accumulated evaluation materials on the candidate's teaching, research and service. If the department faculty body of the rank and tenure status to which the candidate aspires accepts (by 3/4 vote) the promotion and tenure committee's recommendation to nominate, the process continues, following the instructions and time line prescribed by the Office of Academic Affairs and College of Liberal Arts and Sciences. At appropriate times during preparation of the nomination the department's promotion and tenure committee seeks the approval of the appropriate faculty body regarding evaluations of the candidate's teaching, research and service.

#### E. EVALUATION OF FACULTY AND MERIT SALARY DECISIONS

Evaluation of professorial faculty is done by the executive committee, which is elected and chaired by the department chairperson. Its evaluations of teaching, research and service are based on: 1) an updated vita and an annual report filed each year by each faculty member; 2) student teaching evaluations; 3) peer evaluations of teaching, research or service, when available; 4) quality and quantity of activity in teaching,

research and service; 5) success in getting research grants; and 6) awards.

To determine salary levels, a grade is given for each of teaching, research and service and converted to points. Additional points may be added to the possible total for unusual situations (such as extraordinary achievement or salary inequity). The faculty member's point total determines his/her share of the department's merit salary increase pool.

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## EXECUTIVE COMMITTEE

### I. MISSION AND CHARGES OF THE EXECUTIVE COMMITTEE.

The mission of the Executive Committee is to advise the Chair on all issues relating to the governance of the Department and to bring matters of concern to the faculty to the Chair's attention. In addition to meeting regularly to discuss and make recommendations on departmental affairs, a few specific charges of the Executive Committee are listed below.

#### A. Faculty evaluation and salary:

Conduct the annual review and evaluation of senior staff members, and recommend merit salary increases to the Chair, following departmental guidance.

#### B. Tenure and promotion initiation:

In the spring, recommend candidates to the Department for approval of consideration of tenure and promotion, and upon approval, appoint a tenure and promotion committee to work on the cases during the summer (if necessary) and in the next academic year.

#### C. Recruiting:

Help the Chair to determine whether the existing long-term hiring plan is up-to-date, and if judged necessary, help to appoint a committee to draft a new long-term hiring plan and recommend it to the faculty for approval.

#### D. Budget:

At an appropriate time (probably in December), review the current status of the budget with the Chair, who will also seek advice from the Executive Committee when major budgetary changes or opportunities arise.

#### E. Status review of the Department:

During the third and fifth year of the tenure of the Chair, conduct a faculty survey which will be used to review the current status of the Department.

#### F. Election of new Executive Committee members:

In the spring or when needed, conduct the election of new members for the next academic year or for vacancies.

## II. FORMATION OF THE EXECUTIVE COMMITTEE

### A. Organization:

The Executive Committee consists of four elected faculty members and the Department Chair who is also the chair of the committee.

### B. Term:

Each Executive Committee member serves a two-year term (with the exception that when the committee is first formed, two of the four members serve only for one year).

### C. Frequency of election:

Every year in the spring semester, the Executive Committee will conduct a faculty election to choose two new committee members and one alternate for the next academic year. Between regular elections, the elected alternate is the first to fill an available vacant seat, and an election will be held if more vacancies occur.

### D. Eligibility:

Any permanent (i.e., tenured or tenure-track) faculty member who is not a current Executive Committee member and was not an Executive Committee member in the previous academic year is eligible for the election of Executive Committee members, except as amended by F below.

### E. Rules on election:

The current Executive Committee will conduct the election of new members by secret ballots, on which the name of every eligible faculty member is listed. Any permanent (i.e., tenured or tenure-track) faculty member can vote for no more than three candidates with the three distinct weights 5, 3, 2. The two candidates with the highest two total weights will be the new committee members, and the third highest will be the new alternate. A tie will be broken by lot.

### F. In case an alternate substitutes for a regular member of the Executive Committee for more than a semester, the alternate shall be ineligible to serve as a regular member of the committee during the following year. If the alternate serves for a semester or less, then no such restriction shall apply.

## III. DEPARTMENT CHAIR'S TERM

### A. Normally the Department Chair is expected to serve for at most two consecutive three-year terms.

### B. If the Chair seeks a (consecutive) third or higher term, then in the beginning of the last year of the Chair's term, the Executive Committee will conduct a faculty vote to approve, by a three-quarters majority, the Chair's next term. This result will be presented to the Dean for final decision.

### C. If the Chair does not seek a (consecutive) third or higher term, or if such a request is not approved by the faculty, then, with the Dean's approval, a search for a new Chair will begin in the last year of the Chair's term.

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## FACULTY EVALUATION PLAN

Approved by Provost and Executive Vice Chancellor (May 20, 2014) Updates approved May 1, 2017.

The Faculty Evaluation Plan is reprinted from the university policy page, <http://policy.ku.edu/CLAS/faculty-evaluation-plan-mathematics>.

### I. INTRODUCTION

The Department of Mathematics is committed to teaching/advising, research, and service of the highest quality, the achievement of which requires regular faculty evaluation and dedication to faculty development. Faculty members have a personal and professional responsibility to maintain or improve performance and to initiate participation in professional development opportunities. The department has an equal responsibility to actively support these efforts. This faculty evaluation plan documents the Mathematics Department's (I) Performance Expectations, (II) Annual Evaluation System, and (III) Faculty Development Opportunities.

### II. STATEMENT OF PERFORMANCE EXPECTATIONS

The typical distribution of faculty effort will be 40% teaching/advising, 40% research, and 20% service, except in individual cases where a differential allocation of effort (DAE) following departmental guidelines has been agreed upon between the tenured faculty member and the Chair. Tenure-track faculty will be expected to maintain the 40-40-20 allocation of effort until they receive tenure. The phrase differential allocation of effort (DAE) as used in this document refers only to the percentage allocation of effort in teaching, research and service, and not to the underlying reasons for the DAE.

#### A. Unit Expectations

##### 1. Teaching/Advising

All faculty members are expected to teach three courses (or the equivalent) of either undergraduate or graduate mathematics per academic year and to be active in advising. Faculty members in the Mathematics Department shall take their teaching responsibilities seriously and strive for excellence in the classroom. Associate and full professors are expected to direct the research programs of individual graduate students. Tenure-track faculty members are not ordinarily expected to direct Ph.D. dissertations. Such faculty members do occasionally advise M.A. students in their work on their research components. Advising and/or mentoring of undergraduate students should be a normal activity of all faculty members.

##### 2. Research

Tenure-track faculty members are expected to develop and maintain an active research program which gains national recognition and is advanced substantially beyond the level of the Ph.D. dissertation. The research program and resulting publications should provide solid evidence that the faculty member is a dedicated scholar whose research will continue to develop in depth and importance throughout his/her career.

The research of associate and full professors should achieve a level of maturity and excellence that results in a significant impact in the professor's field. It should be known and respected internationally by the best scholars in his/her field.

3. Service

All faculty members are expected to carry out service responsibilities. Associate and full professors are expected to provide substantial service to the Department, College, University and profession by serving on and playing an active role in departmental, College, or University committees. Other examples of professional service include organizing national conferences and meetings, participating in professional organizations, refereeing or reviewing manuscripts for research journals, reviewing grant proposals, active participation in departmental affairs and meetings, professional interactions with faculty from other departments and with people outside the University; and participating in math-related outreach activities.

Overall service from tenure-track faculty is expected to be light. Service is expected at a level commensurate with rank. Tenure-track faculty are expected to participate in appropriate professional activities, such as attending department meetings, carrying out departmental committee assignments, attending national meetings or conferences, and refereeing or reviewing manuscripts for research journals. The service level for a tenure-track faculty member establishes a record that demonstrates professional responsibility and develops capacity for the faculty member to assume future departmental, college, university, and professional roles.

B. Standards for Acceptable Performance for Faculty Members

Each faculty member's effort in teaching/advising, research, and service should be judged to be acceptable each year by the department's Executive Committee as part of the annual evaluation process. The criteria used for these judgments are spelled out in detail below.

Less than acceptable performance in any category (teaching/advising, research, or service) will trigger faculty development counseling in that area. The Chair and the faculty member will develop a written plan to address the area(s) of difficulty. Continued unsatisfactory performance for a period of three years in any category of endeavor (teaching/advising, research or service) may result in a recommendation for dismissal.

C. Differential Allocation of Effort (DAE)

The Department of Mathematics expects faculty to devote equal attention to teaching and research. When evaluating faculty performance, the department applies the weights of 40 percent for teaching, 40 percent for research, and 20 percent for service to the University, community, and profession. These weights are the same for tenured and non-tenured faculty, although the department recognizes that the specific contributions of faculty members to the department's mission will differ depending on career stage.

Changes in the standard 40/40/20 allocation of effort for a set period of time can be initiated by the tenured faculty member or Department Chair. These changes can be short- or long-term and must correspond to changes in work load not just evaluation criteria. Reasons for alterations can include short-term items such as funded research or longer term career-stage issues. Faculty members are not allowed to reduce their teaching or research to less than 10 percent on permanent DAE agreements. Departmental needs take precedence over individual needs when making decisions to alter a faculty member's allocation of effort; such redistribution must be consistent with the best interests of the unit. The most likely occasion for consideration of such changes is in discussion between the Chair and the individual faculty member following annual performance evaluations, or sooner so that appropriate arrangements may be made at the unit level for the coverage of course offerings. Any individualized changes in faculty allocation of effort will be negotiated with the Chair and documented in the faculty member's personnel file.

For short-term DAE agreements (one academic year or less), the DAE is ultimately approved by the unit director or chairperson, with a copy of this endorsement sent to the contact associate dean. For long-term DAE agreements (lasting one year or beyond), approval must also be sought from the appropriate contact dean in the college. All DAEs are reported annually to the College Dean's Office. Agreements for long-term DAEs must be reviewed every three years, although either the faculty member or chairperson/director may request an earlier review in response to changed circumstances or performance. At that time, the agreement may be revised, terminated, or continued.

The selection among these options should be made following the guidelines and process for approval of long-term DAEs contained in the University Policy on [Differential Allocation of Effort \(DAE\)](#).

### III. ANNUAL EVALUATION SYSTEM

#### A. Overview

Evaluation of faculty members is done by the department's Executive Committee. The Committee's evaluations of teaching/advising, research, and service are based on the contents of the annually updated faculty portfolios. The resulting evaluations later will be used to determine merit salary increases, to assist in determining individual goals and expectations, to aid in determining faculty readiness for promotion and/or tenure, and to suggest professional development activities.

The resulting evaluation information about the department as a whole will identify opportunities the department can use to achieve its goals and demonstrate the need for resources.

Tenure-track faculty are also subject to individual performance review by the tenured senior faculty every spring. At the spring departmental meeting, a representative of the mentoring committee presents an in-depth review of the year's performance for each junior faculty member with a view toward the possibility of recommending the award of promotion and tenure. A written summary of the evaluation and discussion is provided to the junior faculty



member. This summary is also available to the Executive Committee for consideration in the annual review.

The annual evaluation timeline is as follows:

**February 1:** Memo to faculty reminding them to update their curriculum vita and portfolio and to provide a written report of the current and preceding two calendar year's teaching/advising, research, and service activities.

**March 15-April 15:** The Department Chair produces a written evaluation letter based on the evaluation results of the Executive Committee and sends it to each faculty member.

**April 15-May 15:** Discussions occur between the Chair and individual faculty members concerning their performance and future expectations.

**B. Portfolio or Annual Report Preparation**

*NOTE: Faculty are responsible for annually maintaining their PRO record, which is also accessed by administration for reports such as the College snapshot of departmental productivity. PRO provides an annual activity report and faculty are advised to view and update their PRO reports before submission of the faculty member's portfolio to the unit. In classifying your work as major and minor, please bear in mind the definitions in the unit's [Promotion and Tenure Guidelines](#).*

Each faculty member is responsible for developing a portfolio documenting quality, quantity, significance, and impact of effort in teaching/advising, research, and service for the Executive Committee's review. It will be updated each year and for the previous two calendar years and assembled cumulatively throughout the faculty member's career. As much as possible it will be kept in duplicate by the department and the faculty member. It should contain:

1. a current curriculum-vitae;
2. curriculum and instruction surveys; student comment sheets should be stored by the faculty member until they are needed for tenure and promotion nominations, sabbatical leave applications, teaching award nominations, or other special purposes.)
3. peer evaluations of teaching, especially for assistant and associate professors;
4. annual report on teaching/advising, research/scholarship and service for the preceding two calendar years and the current year to the time of the report. The report should provide the following information, much of which should also be recorded in summary fashion in the curriculum vitae:
  - a) courses taught, URL for course web site, and any other relevant information;
  - b) mentoring, advising and research direction of graduate and undergraduate students;
  - c) graduate student committee service and directed readings supervised;

- d) publications: refereed articles, books, and proceedings;
- e) grants submitted and grants awarded;
- f) recognition for teaching, research or service;
- g) presentations: plenary talks, conference presentations, colloquium talks, research seminars given. Documentation of especially prestigious presentations would be useful.
- h) department, College, University and professional service;
- i) innovative efforts in teaching research or service; and,
- j) description and documentation of any other activities which the faculty member believes may strengthen his/her credentials for evaluation.

C. Portfolio or Annual Report Review and Evaluation

The Executive Committee, the Promotion and Tenure Committee, and the Chair will use the portfolio information for the annual faculty evaluation process, for tenure and/or promotion consideration, sabbatical applications, award nominations, and for the awarding of merit, if appropriate. Information in the portfolio will be used to judge the quality, quantity, significance, and impact of the faculty member's teaching, research and service, according to the departmental expectations outlined in the section on acceptable performance.

The Executive Committee assigns a grade of excellent, very good, good, marginal, or unacceptable for each of teaching/advising, research and service. These ratings are then converted to a maximum of 10 points each for teaching and research, and 5 points for service: for teaching/advising and research, 10 = excellent, 8 = very good, 6 = good, 4 = marginal, and 2 or less = unacceptable; for service, 5 = excellent, 4 = very good, 3 = good, 2 = marginal, and 1 = unacceptable. Intermediate grades such as 9 = E/VG may also be used when appropriate. For faculty members with a time allocation different from the usual 40-40-20, the potential 25 points will be prorated according to the revised allocation. Ratings will be relative to the expectations of rank and any existing DAE.

The evaluation of the portfolio will typically involve the following:

1. Teaching/Advising

Effective teaching refers to the faculty member's dissemination of knowledge to enhance students' skills, create understanding, and foster intellectual growth. Teaching will be judged based on the entire teaching portfolio of the faculty member in relation to departmental norms relating to the level of coursework and the type of course taught. Teaching excellence may be achieved in many ways including traditional classroom instruction and one-on-one teaching or coaching, and may be documented by several means, including the following:

- a) Systematic student evaluations must be provided for each course taught.

- b) Feedback from advisees, recent alumni, peer reviews.
- c) Teaching awards and commendations; external funding related to the improvement of teaching.
- d) Service on M.A. and Ph.D. comprehensive examinations and advisory committees, and quality advising and mentoring of graduate students. Chairing M.A. and Ph.D. committees is particularly commendable.
- e) Course development that serves the needs of the Department and the University.
- f) Evaluation of advising is based on M.A. and Ph.D. student committees chaired, service on such committees, number of reading courses given, advising of undergraduates, and any other relevant information brought to the committee's attention.
- g) Supervising undergraduate research projects.
- h) The level of contribution and performance in shouldering the departmental teaching load.

*Specific examples of criteria that might be used by the Executive Committee in evaluating teaching/advising:*

**Excellent:** For instance, excellent evaluations, particularly creative and effective teaching methods, active supervision of more than the usual number of graduate students.

**Very good:** For instance, very good evaluations and higher than normal level of effort, effective supervision of graduate students.

**Good:** At the level expected of a faculty member in good standing.

**Marginal:** Evaluations indicate significant room for improvement; has not established good working relations with graduate students.

**Unacceptable:** Failure to satisfactorily carry out the teaching mission of the Department, either because of poor classroom performance or poor cooperation with the Department in meeting its teaching needs and obligations; neglecting to meet classes regularly; extremely poor teaching evaluations and serious student complaints without compensating information from the faculty member's portfolio.

## 2. Research

In the Mathematics Department, peer-reviewed research publications constitute the primary evidence of scholarship. The expectation of the Department is that the faculty member will publish written work in appropriate books and research journals. Publications must be sufficient in both quantity and quality.

### a) Publications

Criteria for evaluating publications include the following:

- i. Refereed articles and research monographs

- i. Anonymous peer review as a condition for publication shall be regarded as a sign of acceptance by colleagues in the candidate's discipline when contribution to scholarship is the purpose of the journal and the criterion of the refereeing. Scholarly books and monographs will be considered important evidence of research capability. A sustained record of publication is a strong indication of an active and successful research program.
  - ii. Invited articles in significant journals also can be important scholarly contributions.
  - iii. The reputation of the journal(s) in which the candidate publishes will be taken into account by Executive Committee members in making their judgments. Publication in a prestigious journal is strong evidence of peer acceptability of the faculty member's research and is highly commendable.
  - iv. Publication of research articles in refereed conference proceedings is evidence of peer acceptability of the faculty member's work.
  - v. Acceptance of a faculty member's work may be measured to some extent by the frequency his or her work is cited by colleagues.
- ii. Papers given at meetings
    - i. It is expected that faculty members will present papers at meetings of scholarly associations. Generally, unpublished papers will not be accorded the weight of peer-reviewed published articles.
    - ii. Active participation in research seminars and collaborative multidisciplinary research can be important scholarly contributions.
    - iii. Publishing reviews of scholarly articles and research monographs in review journals is also a form of scholarly contribution.

b) Research funding

The receipt of a research grant, especially from a funding source outside the University, is strong evidence of peer acceptability of the faculty member's research and is highly commendable. Submission of research projects to funding agencies is a form of scholarly activity.

c) Record

The portfolio must demonstrate an established scholarly career, as reflected in such factors as a substantial and ongoing pattern of publication or creative activity, the faculty member's national or international reputation, and other evidence of an active and productive scholarly career. The following variables are also taken

into consideration when evaluating research:

- i. Evidence of a developed, important research program in the form of peer-reviewed journal articles and/or research monographs and scholarly texts.
- ii. Evidence that published expertise in a particular area has led to such professional activities as: guest lecturers; research consulting; post-doctoral fellowships; requests to contribute to professional meetings, symposia, and scholarly collections; and national and international recognition and honors.
- iii. The reprinting of portions of books and articles in the works of peers.

*Specific examples of criteria that might be used by the Executive Committee in its evaluation of research:*

**Excellent:** For Associate and Full Professors, the kind of publication and funding record that would make a faculty member highly attractive to another university; a leader in his/her field who attracts prospective graduate students or other faculty applicants; for Assistant Professors, performance substantially exceeding normal expectations for the faculty member's rank, which could result in recommendation for early promotion and tenure.

**Very good:** Above the level of normal research activity required for timely advancement within the system; timely publication and presentation of research results in major journals and at professional meetings.

**Good:** Normal level of research activity for a faculty member in good standing.

**Marginal:** Little research productivity; no recent publications.

**Unacceptable:** No research productivity for an extended period of time.

### 3. Service

Service can be provided to the Department, College, University, community, and discipline. It can be expressed through local, state, national, and international avenues. A faculty member must be able to document his/her activities in public and professional service. Such documentation can be provided by indicating the specific types of activities including:

- a) Membership and effective participation on departmental, College, University or Board of Regents committees;
- b) Election to and effective work in offices at the College or University level;
- c) Service to the profession in the form of reviewing grant proposals for external funding agencies and/or refereeing research articles for publication; also writing reviews of published journal articles for the

- profession;
- d) Consulting activity at the local, state, national, and international levels;
- e) Effective work in the community related to the mission of the department;
- f) Effective participation in positions with regional, national, and international professional societies;
- g) Journal editorships and editorial board memberships; and,
- h) Effective administrative work in Department, College or University offices.

*Specific examples of criteria that might be used by the Executive Committee in its evaluation of service:*

**Excellent:** Maintains a high profile in the academic and professional communities; seeks involvement and occupies positions of influence at the university or professional level.

**Very good:** Above the normal level of service activity expected at the faculty member's rank; seeks involvement at the Department, University and Professional level. Expectations will be lower for Assistant Professors than for tenured faculty.

**Good:** Normal level of service activity at the faculty member's level.

**Marginal:** Performs at only a moderate level of effort and without distinction.

**Unacceptable:** Grudgingly accepts service assignments and performs poorly; less than an acceptable minimum level of service.

#### D. Annual Evaluation Feedback Process

The results of the evaluation will be communicated by letter from the Chair to the faculty member when the Executive Committee completes its work by the middle of April. The letter may include suggested strategies for improvement or renewal or any information on progress toward tenure and/or promotion.<sup>[1]</sup><sub>SEP</sub>

The letter will invite a response from the faculty member and a meeting between the faculty member and the Chair to discuss the information submitted, the resulting evaluation of performance, and expectations for the future. If the faculty member so requests, the matter will be referred back to the Executive Committee to determine if a re-evaluation is merited. Documentation of the committee's response will be provided to the faculty member.

In case of a judgment of unacceptable performance, in the absence of any mitigating circumstances, the Chair, in consultation with the Executive Committee, will work with the faculty member to create a mutually acceptable written faculty development plan to address the performance issue. The plan will include a procedure for the future evaluation of the faculty member that includes the goals identified in the faculty development plan.

#### E. Post-tenure Review and the Annual Evaluation Process

This section includes information for faculty members undergoing Post-tenure Review.

1. The Department's post-tenure review (PTR) of each faculty member will be done by a PTR committee and is separate from the annual evaluations.
2. The Post-tenure Review committee will provide a copy of their report to the faculty member, who may submit a written response for inclusion in the post-tenure review file before it is forwarded to the chair for his or her review. If the chair agrees with the report, he or she will indicate that agreement in writing to the faculty member and place a copy in the post-tenure review file. If the chair disagrees with the committee's evaluation, he or she shall explain the reasons for any disagreement in writing, with a copy to the faculty member and the committee.
3. Unit procedures for the relationship between the post-tenure review and the annual evaluation are outlined below in #6.

Additional information can be found in the [Unit's Post-tenure Review Policy](#).

#### F. Outcomes of the Annual Performance Evaluation

The evaluation process of the Department of Mathematics, seen in all its aspects, yields multiple outcomes. It acknowledges faculty accomplishments or shortcomings and makes them matters of record. It initiates discussions that influence the planning of both individual career development and unit evolution. It assists in the identification of opportunities for faculty improvement and renewal. It provides annual as well as cumulative data for merit-salary recommendations, sabbatical-leave and grant applications, tenure and promotion decisions, post-tenure review, and reassignments of responsibilities. And it provides documentation that may be used, at extremes, in support of either recognition or dismissal. Promotion and tenure decisions and post tenure reviews are conducted by committees different from the Executive Committee.

1. Procedures for developing performance improvement plans  
Following the expectations outlined in Part 1 above, if the Chair ascertains that a faculty member's performance seems to be failing to meet academic responsibilities, the Chair and the faculty member shall develop a written plan of methods to improve the faculty member's performance. The plan may include appropriate provisions for faculty development, such as campus opportunities for faculty continued renewal and development, or for other appropriate interventions. The Chair may call upon the University administration for assistance in constructing such a plan, including provision for additional resources, where needed. A faculty member may reject any plan recommended to aid performance levels, but the faculty member must understand that a sustained overall failure to meet academic responsibilities is a basis for dismissal.
2. Procedures for addressing failure to meet academic responsibilities  
The faculty member may request an administrative review from the Chair. If disagreement with a faculty member persists after his/her meeting with the Chair, the faculty member may add comments to the

evaluation documentation for reconsideration by the Executive Committee to determine if a re-evaluation is merited. Documentation of the Committee's response will be provided to the faculty member. The Executive Committee will accept additional information from the faculty member throughout the evaluation period. The Executive Committee will submit a non-binding recommendation to the Chair. At any point during this process, the faculty member has the right to write a letter documenting his/her objections. This letter will be made a part of the faculty member's personnel file.

If a faculty member has been informed that his/her performance still fails to meet academic responsibilities, the faculty member may request a review by a faculty committee designated to hear such matters in the College. The review committee will issue a non-binding recommendation on the appropriateness of this conclusion to the department Chair. The Chair may change the evaluation after receiving the committee's decision, or may choose not to do so. In any event, the report of the committee will become a permanent part of the faculty member's personnel file within the academic unit and shall be available to the faculty member.

Department chairs shall consult annually with the Dean, and the Dean shall consult annually with the Provost on the progress of any faculty member who fails within this category of failure to meet academic responsibilities.

3. Sustained failure to meet performance expectations

Based upon the judgment that there has been a sustained failure to meet academic responsibilities, the Dean may recommend to the Provost that a tenured faculty member be dismissed. In making this determination, the Dean shall consider the nature of the failure to meet academic responsibilities, the reason or reasons for this failure, the number of years that the faculty member has failed to meet academic responsibilities, the level of discernible improvement in the faculty member's performance after being notified of any failure in performance, and the extent to which the faculty member has complied with the terms of any plan developed to improve the faculty member's performance. The Provost will review the case and, if the Provost agrees with the Dean's recommendation, the Provost will recommend to the Chancellor that the faculty member be dismissed. If the Chancellor agrees and recommends dismissal, this recommendation will go to the Faculty Rights Board.

Should any recommendation to dismiss be brought against a tenured faculty member based exclusively or in part on grounds of sustained failure to meet academic responsibilities, both the report(s) of the review committee(s), the annual written evaluation(s) of the unit administrator concerning the faculty member, any outside evaluations, and any germane written response by the faculty member to the charges shall be made available to the Faculty Rights Board.

G. Faculty Development Opportunities



All faculty members are encouraged to become aware of and take advantage of development opportunities. These can be used to ensure that all faculty members achieve the highest possible level of performance. Faculty development will take on a variety of forms depending on the career stage of the individual faculty member.

Having consulted with the faculty members involved, the Chair will assign to each tenure-track faculty member a tenured faculty mentor with a common or related research interest. This mentor will help orient the tenure-track faculty member and provide information about faculty development opportunities. Other faculty mentors with particular experience and skills will also be available to assist tenure-track faculty members on issues of teaching, advising, using technology and writing grant proposals. The Chair will communicate departmental expectations to all faculty members.

1. Research Intensive Semesters (RIS)

CLAS offers all junior faculty members in good standing a reduced teaching responsibility at some point during the faculty member's pretenure employment. Faculty members will be released from classroom teaching duties for up to one semester, depending upon the relevant departmental teaching expectations, and will be expected to concentrate on research intensive activities. Faculty members are eligible for a research intensive semester assignment up to and including the spring semester before their publication dossiers are sent out to external reviewers in June, with the latest possible Research Intensive Semester (RIS) assignment typically being the second semester of the fifth year. Faculty members in good standing who have stopped their tenure clock remain eligible for a RIS assignment. The actual decision of which year/semester the individual is assigned a research intensive semester will be made in consultation with the department chair. Note that paid leaves and fellowships do not take the place of a RIS. Once the Chair approves the RIS for the junior faculty member, the details concerning the RIS should be confirmed to the faculty member in writing and documented in their personnel file. The Chair also provides a copy of this authorization to the College Dean's Office so that RIS data can be tracked. Faculty members who are granted a RIS are expected to continue to meet their usual duties regarding departmental advising and other service activities.

All faculty members may have individual development interests that can be addressed by interaction with colleagues and the use of departmental, University and external resources. Examples of these are:

The Center for Teaching Excellence

External Proposal Development Workshop

Faculty Development Fund

Faculty Travel and International Travel Funds

General Research Fund, including the New Faculty General Research Fund

See [Faculty Development Programs](#) for information about additional faculty

development opportunities.

#### IV. APPENDICES

##### Appendix A. Student Evaluation of Teaching

The Department of Mathematics utilizes the University's "Student Survey of Teaching" as the instrument for this purpose. Student comment sheets (attached) are also used. The department has voted to use these comments in the evaluation process.

##### **Instrument(s) Used For the Student Evaluation of Teaching**

Student evaluations of teaching are an important part of the feedback that faculty members receive. Your comments are important to us.

##### **Things the Instructor Did Well:**

##### **Suggested Improvement:**

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## GUIDELINES FOR FACULTY ON PROGRESS TOWARD TENURE REVIEW

Approved by Dean (September 1, 2011) Updates approved December 13, 2016.

The Guidelines for Faculty on Progress Toward Tenure Review for the College of Liberal Arts & Sciences is reprinted from the university policy page, <http://policy.ku.edu/CLAS/progress-toward-tenure-review-CLAS>.

The following guidelines serve as the official College statement on matters related to the *progress toward tenure review* for tenure-track faculty members in the College of Liberal Arts & Sciences.

### I. PRE-TENURE MATTERS

As part of its procedures for promotion and tenure, each unit in the College shall incorporate a plan for mentoring faculty prior to tenure. Such plans should provide appropriate information and guidance to assist faculty members in the development of successful careers in scholarship, teaching (or professional performance), and service, and in documenting a record of their careers for purposes of the tenure process. Before the end of the first semester following the initial appointment, each unit shall provide faculty members with information concerning the standards and procedures for award of tenure and promotion in rank, including copies of the written criteria and procedures approved by the unit, the College, and of the Provost's guidelines and forms. Working with the faculty member, each unit shall, on an ongoing basis, generate and compile the documentation necessary to evaluate research, teaching (or professional performance), and service.

### II. PROGRESS TOWARD TENURE REVIEW

In addition to this formal progress toward tenure review, units are required to make internal, annual performance evaluation reviews of faculty on tenure-track appointments in order to provide ongoing, constructive advice and direction to the faculty member seeking tenure and promotion in the College. As required by the Board of Regents, a unit must review its "Annual Faculty Performance Evaluation Plan" every three years. This document is to be made available to all tenure-track and tenured faculty. Tenure-track faculty members are entitled to sound advice and guidance concerning their prospects for promotion and tenure at the University. The progress toward tenure review should document that guidance. The CCAPT review is designed to be a check to determine whether unit standards of evaluation and assessment of the individual are in line with those of the College and University promotion and tenure committees. Of special concern is to identify any cases in which a unit judges that a tenure-track, faculty member is doing well, but the CCAPT would evaluate the candidate more critically. It is far better that any such discrepancies be discovered in the tenure-track period while there is still ample time for consultation and change.

The progress toward tenure review is intended to provide faculty members with a meaningful appraisal of their progress toward tenure and orient them toward basic aspects of the tenure process. Neither the progress toward tenure review nor its results shall be included in a faculty member's promotion and tenure record, and recommendations for or against promotion and tenure should not be influenced by favorable or unfavorable results of the progress toward tenure review. This limitation

does not prevent consideration, during the promotion and tenure review, of the same documents and information considered for purposes of the progress toward tenure review.

A non-tenured faculty member will receive a progress toward tenure review in the spring semester of their third year. A faculty member's years of prior service (as recognized and determined by the Office of the Provost) will be counted in calculating years of service. For example, a faculty member who has been given credit by the Provost Office for one year of prior service will be reviewed in the spring semester of his/her second year at KU; a faculty member with two years of prior service will be reviewed in the spring semester of his/her first year at KU.

A faculty member *may* be exempt from the progress toward tenure review process; if he or she has received credit for three years prior service, the hiring process will be considered the progress toward tenure review. During a progress toward tenure review, the unit shall review the research, teaching, and service record of the faculty member with a view to assessing the probability of subsequent tenure and promotion in the College.

### III. DETERMINING PRIOR SERVICE

A faculty member's years of prior service (as recognized and determined by the Office of the Provost) will be counted in calculating years of service. For example, a faculty member who has been given credit by the Provost Office for one year of prior service will be reviewed in the spring semester of his/her second year at KU; a faculty member with two years of prior service will be reviewed in the spring semester of his/her first year at KU. A faculty member *may* be exempt from the progress toward tenure review process; if he or she has received credit for three years' prior service, the hiring process will be considered the progress toward tenure review. During a progress toward tenure review, the unit shall review the teaching/advising, research, and service record of the faculty member with a view to assessing the probability of subsequent tenure and promotion in the College.

### VI. PROGRESS TOWARD TENURE REVIEW PROCESS

In the spring semester, approximately midway between a faculty member's appointment and mandatory review year (usually the third year), a non-tenured faculty member will receive a progress toward tenure review.

The Progress Toward Tenure Review form is to be used for this purpose and can be found on the Provost's Office website (<http://facultydevelopment.ku.edu/pttr>) along with guidelines and instructions. . The unit must submit the following documentation:

- Candidate PTTR CV: *The Provost Office recommends the use of the PRO System to generate the candidate CV for the PTTR process.*
- Candidate PTTR Statement
- Candidate PTTR Verification and List of Supplemental Materials, including the evaluation of student teaching

- The required Initial Level Review Evaluation Document: *This document includes the candidate's position description and the initial review unit's recommendation on progress toward tenure.*

**Supplemental Materials:** The identical supplemental materials (both required and optional) submitted at the initial unit level will also be submitted at the College level for the CCAPT's subsequent intermediate review. Required teaching evaluations (quantitative analysis in all cases and student comments based on the guidelines in your unit) for all courses taught are considered to be part of the formal PTTR portfolio and shall also be submitted at the initial unit level. For specific instructions on what constitutes supplemental materials (both required and optional), see: <http://facultydevelopment.ku.edu/pttr>.

All dossier materials (including the required and optional supplemental materials) shall be forwarded electronically to the College Dean's Office no later than *the first Friday in February*. External evaluator reviews are not required for the progress toward tenure review.

The CCAPT will review the evaluation and report the Committee's recommendation on the progress toward tenure of the faculty member to the Dean of the College. The Committee's evaluation is then shared with the faculty member and the unit chairperson/director in a letter addressed to the faculty member prepared by the Dean and the Chair of the CCAPT. After the letter has been received, the chairperson/director and the faculty member meet to discuss the evaluation. The chairperson/director will then notify the College Dean's Office via [claspt@ku.edu](mailto:claspt@ku.edu) of the date that the Progress Toward Tenure Review discussion occurred with the faculty member.

## V. JOINT APPOINTMENTS AND THE PROGRESS TOWARD TENURE REVIEW

The progress toward tenure review will be initiated within the primary unit and in consultation with the secondary unit in compliance with relevant College and University policies. Candidates who hold joint appointments prepare only one set of progress toward tenure review materials for review by both units in which they hold appointments. The primary unit is responsible for:

1. All administrative protocols pertinent to the process, including initiation of the process.
2. Ensuring that the candidate has completed all the necessary sections of the *Candidate Documents* form.
3. Collecting the evaluation materials from the candidate and secondary unit.
4. Forwarding the candidate's dossier to the College Dean's Office.

Candidates will be asked to review and endorse a position description by each unit in which they hold an appointment. The materials that are required of each unit for the progress toward tenure review are the same as the points listed above in the section entitled, *Progress Toward Tenure Review*. Each unit must provide a separate evaluation of the candidate's performance in the individual unit.

## VI. NON-REAPPOINTMENT

Prior to tenure, a faculty member is considered to be serving a probationary period and the unit or College may decide not to reappoint the faculty member. Non-reappointment may be justified by a continued sustained failure of the faculty member in carrying out the responsibilities of one's faculty position, including teaching/advising (or professional performance), research or scholarly productivity, or service. The normal procedure for forwarding recommendations for non-reappointment shall be from the unit administrator to the Dean of the College, and from the Dean to the Provost. Prior to forwarding any recommendation of non-reappointment to the Chancellor, the Provost shall notify the faculty member in writing of the recommendation and the reasons for it. The notification shall also inform the faculty member of the right to appeal the recommendation to the Faculty Rights Board. Such an appeal should be filed with the Office of University Governance within 14 days of receiving notification and shall be considered pursuant to procedures established by the board pursuant to section 6.8.3 of the Faculty Senate Rules and Regulations. Following the Chancellor's decision, the legally effective notice of non-reappointment shall be issued over the signature of the Provost and shall include a statement of the reasons for the decision.

Pursuant to Board of Regents policy (adopting the American Association of University Professors statement of 1964), written notice of non-reappointment shall be provided to a faculty member as follows:

1. Not later than March 1<sup>st</sup> of the first year of service, if the appointment expires at the end of that academic year; or, if a one-year appointment terminates during an academic year, at least three months in advance of its termination.
2. Not later than December 15<sup>th</sup> of the second year of service, if the appointment expires at the end of that academic year; or, if the appointment for a second year of service terminates during an academic year, at least six months in advance of its termination.
3. At least 12 months before the expiration of an appointment after two or more years of service at the University. This places the notification deadline on the last day of the academic year for faculty on nine-month appointments, and on June 30 for those on 12-month appointments.

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## PROMOTION AND TENURE PROCEDURES

Approved by the Department of Mathematics, the Faculty Senate Committee on Standards and Procedures for Promotion and Tenure (October 15, 2012). Updates approved June 12, 2017.

The Promotion and Tenure Procedures is reprinted from the university policy page, <http://policy.ku.edu/CLAS/promotion-tenure-mathematics>.

### I. GENERAL PROVISIONS

#### A. Scope and Purpose

The award of tenure and/or promotion in rank are among the most important and far-reaching decisions made by the department because an excellent faculty is an essential component of any outstanding institution of higher learning. Promotion and tenure decisions also have a profound effect on the lives and careers of faculty. Recommendations concerning promotion and tenure must be made carefully, based upon a thorough examination of the candidate's record and the impartial application of these criteria and procedures, established in compliance with the [Faculty Senate Rules and Regulations \(FSRR\) Article VI](#).

It is the purpose of this document to promote the rigorous and fair evaluation of faculty performance during the promotion and tenure process by (a) establishing criteria that express the department's expectations for meeting University standards in terms of disciplinary practices; (b) providing procedures for the initial evaluation of teaching, scholarship, and service; (c) preserving and enhancing the participatory rights of candidates, including the basic right to be informed about critical stages of the process and to have an opportunity to respond to negative evaluations; and (d) clarifying the responsibilities, roles, and relationships of the participants in the promotion and tenure review process.

Each level of review, including the initial review, the intermediate review, and the University level review, conducts an independent evaluation of a candidate's record of performance and makes independent recommendations to the Chancellor. Later stages of review neither affirm nor reverse earlier recommendations, which remain part of the record for consideration by the Chancellor. It is the responsibility of each person involved in the review process to exercise his/her own judgment to evaluate a faculty member's teaching, scholarship, and service based upon the entirety of the data and information in the record. No single source of information, such as peer review letters, shall be considered a conclusive indicator of quality.

#### B. Academic Freedom

All faculty members, regardless of rank, are entitled to academic freedom in relation to teaching and scholarship, and the right as citizens to speak on matters of public concern. Likewise, all faculty members, regardless of rank, bear the obligation to exercise their academic freedom responsibly and in accordance with the accepted standards of their academic disciplines.

### C. Confidentiality and Conflicts of Interest

Consideration and evaluation of a faculty member's record is a confidential personnel matter. Only those persons eligible to vote on promotion and tenure may participate in or observe deliberations or have access to the personnel file (except that clerical staff may assist in the preparation of documents under conditions that assure confidentiality).

No person shall participate in any aspect of the promotion and tenure process concerning a candidate when participation would create a clear conflict of interest or compromise the impartiality of an evaluation or recommendation.

If a candidate believes that there is a conflict of interest, the candidate may petition to have that person recuse him/herself. If a committee member does not recuse him/herself, a decision about whether that person has a conflict of interest shall be made by a majority of the other committee members.

## II. PROMOTION AND TENURE STANDARDS

*General Principles.* The University strives for a consistent standard of quality against which the performance of all faculty members is measured. Nonetheless, the nature of faculty activities varies across the University and a faculty member's record must be evaluated in light of his/her particular responsibilities and the expectations of the discipline. These criteria state the department's expectations of performance in the areas of teaching, scholarship, and service necessary to satisfy the University standards for promotion for the award of tenure and/or promotion to associate professor and for promotion to full professor, or equivalent ranks.

Teaching and scholarship should normally be given primary consideration, but the particular weight to be accorded to each component of a faculty member's activities depends upon the responsibilities of the faculty member. The College has traditionally recognized the 40-40-20 formula for weighting research, teaching, and service, except when weight is differentiated for unclassified academic staff members pursuant to their job description.

### A. Teaching

Teaching is a primary function of the University, which strives to provide an outstanding education for its students. The evaluation of teaching includes consideration of syllabi, course materials, and other information related to a faculty member's courses; peer and student evaluations; a candidate's own statement of teaching philosophy and goals; public representations of teaching; and other accepted methods of evaluation, which may include external evaluations.

Effective teaching in the Mathematics Department refers to the faculty member's dissemination of knowledge to enhance students' skills, create understanding, and foster intellectual growth. Teaching will be judged based on the entire



teaching portfolio of the faculty member in relation to departmental norms relating to the level of coursework and the type of course taught.

Teaching excellence may be achieved in many ways including traditional classroom instruction and one on one teaching or coaching, and may be documented by several means, including the following:

1. Student perceptions, with special emphasis on perceived strengths and weaknesses. Systematic student evaluations must be provided for each course taught by the candidate.
2. Perceptions of advisees, recent alumni, peer reviews.
3. Teaching awards and commendations.
4. Service on M.A. and Ph.D. comprehensive examinations and advisory committees, and quality advising and mentoring of graduate students. Special significance is attached to supervising Ph.D. students.
5. Course and curricular development to address the needs of the department and the University.
6. Teaching related external funding.

All faculty members are expected to teach three courses (or the equivalent) of either undergraduate or graduate mathematics per academic year and to be active in advising. Direction of Ph.D. dissertations is not ordinarily expected of non-tenured faculty; however, such faculty members do occasionally advise M.A. students' work on their research components. All faculty members are expected to take their teaching and advising responsibilities seriously and to strive for excellence in the classroom.

High quality teaching is serious intellectual work grounded in a deep knowledge and understanding of the field and includes the ability to convey that understanding in clear and engaging ways.

The conduct of classes is the central feature of teaching responsibilities at KU, but teaching also includes supervising student research and clinical activities, mentoring and advising students, and other teaching-related activities outside of the classroom.

Under the University standards for the award of tenure and/or promotion to associate professor, the record must demonstrate effective teaching, as reflected in such factors as command of the subject matter, the ability to communicate effectively in the classroom, a demonstrated commitment to student learning, and involvement in providing advice and support for students outside the classroom.

In the Department of Mathematics, the following teaching expectations to meet University standards apply for the award of tenure and/or promotion to the rank of associate professor: The record must substantiate effective teaching and advising, as demonstrated by the candidate's teaching portfolio, student and peer

evaluations, and mentoring of both graduate and undergraduate students.

Under the University standards for promotion to the rank of professor, the record must demonstrate continued effectiveness and growth as a teacher, as reflected in such factors as mastery of the subject matter, strong classroom teaching skills, an ongoing commitment to student learning, and active involvement in providing advice and support for students outside the classroom.

In the Department of Mathematics, the following teaching expectations to meet University standards apply for the promotion to the rank of professor: Substantial activity in the mentoring of students, such as chairing M.A. or Ph.D. committees, offering reading courses, supervising undergraduate research, and effective course development,

## B. Scholarship

The concept of “scholarship” encompasses not only traditional academic research and publication, but also the creation of artistic works or performances and any other products or activities accepted by the academic discipline as reflecting scholarly effort and achievement for purposes of promotion and tenure. While the nature of scholarship varies among disciplines, the University adheres to a consistently high standard of quality in its scholarly activities to which all faculty members, regardless of discipline, are held. In the Department of Mathematics, peer-reviewed research publications constitute the primary evidence of scholarship. The expectation of the department is that the candidate will publish written work in appropriate journals and books. Published works are those that have appeared in a journal or a book that has been released. In press refers to work that has been written and accepted with no substantial revisions pending; a letter from the editor is needed to show that a work is in-press.

1. Publications must be sufficient in both quantity and quality to merit promotion. Criteria for evaluating publications include the following:
  - a. Refereed articles and books. Evidence of a developed, important research program in the form of peer-reviewed journal articles and/or books is needed. Anonymous peer review as a condition for publication shall be regarded as a sign of acceptance by colleagues in the candidate’s discipline when contribution to scholarship is the purpose of the journal and the criterion of the refereeing.
  - b. Invited articles in significant journals also can be important scholarly contributions. When the importance of an invited contribution is not established by the reputation of the editor who invites it or the publication in which it appears, other indices of peer acceptance may be cited.
  - c. External reviewers will be asked to comment on the quality of publications.
  - d. The reputation of the journal(s) in which the candidate publishes will be

taken into account.

- e. Published reviews of a candidate's book can be evidence of the importance of its contribution.
  - f. Acceptance of a candidate's work may be measured to some extent by the frequency his or her work is cited by colleagues and the quality of the journal in which the work is cited. Sometimes evaluations accompanying citation provide qualitative evidence of the impact of an article, book, or a research agenda developed by the candidate. The reprinting of articles or excerpts in anthologies is a related form of acknowledgment.
  - g. It is expected that faculty members will present papers at meetings of scholarly associations. Generally, unpublished papers will not be accorded the weight of published papers.
  - h. Publishing reviews of scholarly articles and research monographs in review journals is also a form of scholarly contribution.
2. Research funding. The receipt of a research grant, especially from a funding source outside the University, is strong evidence of peer acceptability of the faculty member's research and is highly commendable. Submission of research projects to funding agencies is a form of scholarly activity.
  3. Record. The portfolio must demonstrate an established scholarly career, as reflected in such factors as a substantial and ongoing pattern of publication or creative activity, external reviews of the candidate's work by eminent scholars or practitioners in the field, the candidate's national or international reputation, and other evidence of an active and productive scholarly career. The following variables are also taken into consideration when evaluating research:
    - a. Evidence of a developed, important research program in the form of peer-reviewed journal articles and/or books. The research must be sufficient both in terms of quantity and quality.
    - b. The favorable response of peers to the individual's work as evidenced by 1) letters of recommendation, 2) awards, and 3) reviews.
    - c. Evidence that published expertise in a particular area has led to such professional activities as: guest lecturers; consultantships; post-doctoral fellowships; requests to contribute to professional meetings, symposia, and scholarly collections; and national and international recognition and honors.
    - d. The reprinting of portions of books and articles in the works of peers.

Under the University standards for the award of tenure and/or promotion to the rank of associate professor, the record must demonstrate a successfully developing scholarly career, as reflected in such factors as the quality and

quantity of publications or creative activities, external reviews of the candidate's work by respected scholars or practitioners in the field, the candidate's regional, national, or international reputation, and other evidence of an active and productive scholarly agenda.

In the Department of Mathematics, the following scholarship expectations to meet University standards apply for the award of tenure and/or promotion to the rank of associate professor: Non-tenured faculty are expected to develop and maintain an active research program which gains national recognition and is advanced substantially beyond the level of the Ph.D. thesis. It should provide solid evidence that the faculty member is a dedicated scholar whose research will continue to develop in depth and importance throughout his or her career.

Under the University standards for promotion to the rank of professor, the record must demonstrate an established scholarly career, as reflected in such factors as a substantial and ongoing pattern of publication or creative activity, external reviews of the candidate's work by eminent scholars or practitioners in the field, the candidate's national or international reputation, and other evidence of an active and productive scholarly career.

In the Department of Mathematics, the following scholarship expectations to meet University standards also apply for the award of tenure and/or promotion to the rank of professor: The research of the candidate should achieve a level of maturity and excellence that is manifested by a significant impact on the professor's field. It should be known and respected internationally by the best scholars in his/her field.

### C. Service

Service is an important responsibility of all faculty members that contributes to the University's performance of its larger mission. Although the nature of service activities will depend on a candidate's particular interests and abilities, service contributions are an essential part of being a good citizen of the University. The Department of Mathematics accepts and values scholarly service to the discipline or profession, service within the University, and public service at the local, state, national, or international level.

Examples of service to the profession include reviewing funding proposals and journal articles, serving on editorial boards, organizing professional meetings or conferences, and service to professional organizations.

In the Mathematics Department, service can be provided to the Department, College, University, community, and discipline. It can be expressed through local, state, national, and international avenues. A faculty member must be able to document his/her activities in public and professional service. Such documentation can be provided by indicating the specific types of activities including:

1. Membership and effective participation on departmental committees.

2. Membership and effective participation on College or University committees.
3. Election to and effective work in offices at the College or University level.
4. Consultation activity at the local, state, national, and international levels.
5. Effective work in the community in relation to the mission of the department.
6. Effective participation in positions with regional, national, and international professional societies.
7. Refereeing research articles for publication; reviewing proposals for external funding agencies.
8. Journal editorships and editorial board memberships.
9. Effective administrative work in Department, College, or University offices.

Under the University standards for the award of tenure and/or promotion to associate professor, the record must demonstrate a pattern of service to the University at one or more levels, to the discipline or profession, and/or to the local, state, national, or international communities.

In the Department of Mathematics, the following service expectations to meet University standards apply for the award of tenure and/or promotion to the rank of associate professor: Service is expected at a level commensurate with rank. Non-tenured faculty are expected to participate in appropriate professional activities, such as attending department meetings, carrying out departmental committee assignments, attending national meetings or conferences, and refereeing or reviewing manuscripts for research journals. The service level for a non-tenured faculty establishes a record that demonstrates professional responsibility and develops capacity for the non-tenured faculty member to assume future departmental, College, University, and professional roles.

Under the University standards for promotion to the rank of professor, the record must demonstrate an ongoing pattern of service reflecting substantial contributions to the University at one or more levels, to the discipline or profession, and/or to the local, state, national, or international communities.

In the department, the following service expectations to meet University standards apply for the promotion to the rank of professor: Effective and substantial service to the department and University in the form of serving on and chairing committees at the departmental level and serving on College and University committees; service to the profession in the form of refereeing journal articles, writing reviews of journal articles, organizing conferences and workshops, serving on review panels for external funding agencies, serving in editorial positions for journals, and participation in mathematical outreach activities.

D. Ratings for Performance

Using the criteria described above, the candidate's performance in the areas of teaching, scholarship, and service will be rated using the terms "excellent," "very good," "good," "marginal," or "poor," defined as follows:

- (a) "Excellent" means that the candidate substantially exceeds expectations for tenure and/or promotion to this rank.
- (b) "Very Good" means the candidate exceeds expectations for tenure and/or promotion to this rank.
- (c) "Good" means the candidate meets expectations for tenure and/or promotion to this rank.
- (d) "Marginal" means the candidate falls below expectations for tenure and/or promotion to this rank.
- (e) "Poor" means the candidate falls significantly below expectations for tenure and/or promotion to this rank.

Absent exceptional circumstances, no candidate may be recommended for promotion or tenure without meeting standards in all applicable areas of performance, and strong candidates are likely to exceed normal expectations in one or more categories

### III. PROMOTION AND TENURE PROCEDURES

The department conducts the initial review of the candidate pursuant to the procedures and requirements of section 5 of Article VI of the *FSRR* in connection with the candidate's responsibility in the department.

#### A. Promotion and Tenure Committee

The departmental review committee shall evaluate the candidate's teaching, research, and service. In the Department of Mathematics, the preliminary review of candidates takes place at a specially designated meeting of the associate and full professors during the spring semester. The date of this meeting is made known in advance to all tenured faculty so that potential candidates are aware and can ask the Executive Committee to be considered. During the first part of this meeting, the Executive Committee presents the names of candidates for promotion to the rank of associate professor with tenure. After full discussion, the tenured faculty decides whether or not to begin the initial review of each candidate. The associate professors are then excused, and the Executive Committee presents the names of candidates for promotion (or promotion and tenure) to the rank of full professor. Again, after full discussion, the full professors decide whether or not to begin the initial review of each candidate.

After this meeting, an initial review committee (or promotion and tenure committee) is appointed for each approved candidate by the Chair of the department in consultation with the Executive Committee. Each such committee will consist of at least three tenured faculty members together with the Chair

(who is not a voting member of the committee(s)). Associate professors may serve on the initial review committees of candidates for associate professor, but not on those of candidates for full professor.

In the Fall semester, the recommendation(s) of the promotion and tenure committee(s) shall be forwarded for consideration to a committee of the whole consisting of all faculty members holding the appropriate academic rank in the Department of Mathematics. Faculty members must be of equal or higher rank than the rank for which the candidate is being considered.

No students or untenured faculty members, except unclassified academic staff with the rank equivalent to or higher than associate professor, shall serve on the promotion and tenure committee or vote on any recommendation concerning promotion and/or tenure.

#### B. Initiation of Review

Prior to the beginning of the spring semester, the Provost notifies all faculty whose mandatory review year will be the following academic year, with copies provided to the unit administrators and the dean. Upon receipt of this notice or if a faculty member requests it prior to the mandatory review year, the unit shall initiate procedures for evaluating the candidate for the award of promotion and/or tenure.

At or before the beginning of the spring semester, the unit shall consider the qualifications of all faculty members below the rank of full professor, with a view toward possible promotion in rank during the following academic year. After considering a faculty member's qualifications, if the unit determines that those qualifications may warrant promotion in rank, or if the faculty member requests it, the unit shall initiate procedures for reviewing the faculty member for promotion to full professor.

#### C. Preparation of the Promotion and/or Tenure File

*NOTE:* Candidates who hold joint appointments prepare only one set of promotion and tenure materials for review by both units in which they hold an appointment. The initial review units (i.e., departments, centers, etc.) shall consult with each other on their evaluations and the evaluation process, but each initial review unit must provide a separate evaluation of the candidate's performance in the unit. Please refer to the [College's Promotion and Tenure Statement](#) for detailed instructions. It is the responsibility of the candidate to complete the appropriate portions of the form and provide necessary documents and information in accordance with the Provost's guidelines, with assistance from the department.

The promotion and tenure committee shall receive the form and accompanying materials from the candidate and finish compiling the record of the candidate's teaching, scholarship, and service in accordance with the Provost's guidelines.

The departmental review committee shall provide for the solicitation of outside

reviewers to assist in the evaluation of a faculty member's scholarship and in accordance with College procedures. Emphasis shall be placed on selecting independent reviewers in the same or related discipline who hold academic rank or a professional position equal to or greater than the rank for which the candidate is being considered. The committee shall give the candidate the opportunity to suggest individuals to be included or excluded from the list of reviewers. The committee, however, is responsible for using its judgment in the final selection of reviewers. For College specific requirements and guidelines, please refer to "[Section B. Process for Obtaining Evaluation Letters from External Reviewers](#)" within the College's posted policy for promotion and tenure.

When soliciting external reviews of a candidate's scholarship, the promotion and tenure committee shall inform prospective reviewers of the extent to which the candidate will have access to the review. The College's confidentiality policy regarding soliciting external reviewers for the promotion and tenure review process is as follows:

*"As a part of the promotion and/or tenure review process, we are soliciting assessments of Professor \_\_\_\_'s research contributions from academic colleagues and distinguished professionals. These letters will become part of the candidate's promotion and tenure dossier and are treated as confidential by the University to the extent we are permitted to do so by law."*

#### D. Recommendations

Upon completion of the record, the committee conducting the initial review shall evaluate the candidate's record of teaching, scholarship, and service in light of the applicable standards and criteria and make recommendations in accordance with the voting procedures detailed below. The committee recommendation, determined by consensus, consists of ratings in each of the three areas, supported by detailed write-ups of the candidate's performance in all three areas, together with a recommendation for or against promotion and/or tenure. These recommendations, together with all other supporting evidence, are made available for consideration to a committee of the whole consisting of all faculty members holding the appropriate academic rank. In the Mathematics Department, this committee consists of either (a) all tenured associate and full professors (for promotion of assistant professors) or (b) all tenured full professors (for promotion of associate professors).

In the Department of Mathematics, voting procedures are as follows: The recommendation of the promotion and tenure committee is presented to the committee of the whole. After full discussion of the recommendation, including possible modification of the ratings by majority vote, the committee of the whole votes by secret ballot. A favorable departmental recommendation requires the approval of  $\frac{3}{4}$  of the members who voted.

The Promotion and Tenure Committee shall prepare the evaluation and summary evaluation sections of the promotion and/or tenure forms. The forms and



recommendations shall be forwarded to the chair, who shall indicate separately, in writing, whether he or she concurs or disagrees with the recommendations of the committee of the whole. The department chair shall communicate the recommendations of the initial review, and his or her concurrence or disagreement with the recommendation, to the candidate and provide the candidate with a copy of the summary evaluation section of the promotion and tenure form. Negative recommendations shall be communicated in writing and, if the review will not be forwarded automatically, the chair shall inform the candidate that he or she may request that the record be forwarded for further review.

Favorable recommendations, together with the record of the initial review, shall be forwarded to the College Committee on Appointments Promotion, and Tenure conducting the intermediate review. Negative recommendations resulting from an initial review shall go forward for intermediate review only if it is the candidate's mandatory review year or if the candidate requests it.

E. Intermediate Review

The candidate may submit a written response to a negative recommendation by the department, or to a final rating of teaching, research, or service below the level of "good" included in the evaluation section of the recommendation. The written response is sent separately by the candidate to CCAPT.

A request for information by CCAPT and/or UCPT shall be sent to the department chair who shall immediately provide a copy to the candidate and inform the initial review committee. The chair and/or committee shall prepare the department's response in accordance with the initial review procedures.

The candidate shall be afforded an opportunity to participate in the preparation of the department's response and/or to submit his/her own documentation or comment to the CCAPT and/or UCPT as applicable.

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## POST-TENURE REVIEW CRITERIA AND PROCEDURES

Approved by the Department of Mathematics (April 28, 2014). Includes updates through October 12, 2015.

The Post-Tenure Review Criteria and Procedures is reprinted from the university policy page, <http://policy.ku.edu/CLAS/post-tenure-review-mathematics>.

### I. GENERAL PRINCIPLES

In accordance with [Board of Regents requirements](#) (II.C.8, or page 63), [Article 7 Section 4 of the Faculty Senate Rules and Regulations](#), and the University Policy on [Post-tenure Review](#), the Department of Mathematics, hereafter referred to as the Department, has adopted these expectations and procedures for conducting post-tenure review. Post-tenure review is a process for periodic peer evaluation of faculty performance that provides an opportunity for a long-term assessment of a faculty member's accomplishments and future directions in the areas of teaching/advising, scholarship, and service.

Post-tenure review must be conducted in a manner that respects the rights of faculty members involved, including academic freedom, tenure, and due process. In addition, all those involved in the evaluation process must recognize that it is a confidential personnel matter and take appropriate steps to protect confidentiality.

### II. PERIOD FOR REVIEW

Faculty members will be reviewed once every seven years following the receipt of tenure with the review occurring in the unit(s) that conducts their annual evaluation. Post-tenure review covers the seven-year period leading up to the review, including the six prior annual evaluation letters and activities since the last annual evaluation. The cycle is restarted if a faculty member is evaluated for promotion or is awarded a distinguished professorship. The time period when a faculty member is on medical or familial leave or that would otherwise be excluded when computing time in rank does not count toward this period. In addition, time serving as department chair, program director, dean or associate dean, or other administrative position subject to administrative review is excluded. The review may be postponed if it falls in a year when the faculty member is on leave. Faculty members on phased retirement or whose retirement date has been approved by the university will be exempt from review under this policy. The dean of the College will notify faculty members scheduled for post-tenure review no later than March 15th in the spring semester preceding the academic year of review.

### III. UNIT EXPECTATIONS

All tenured faculty members must meet academic responsibilities in the areas of teaching/advising, scholarship, and service. Unless otherwise specified by the job description or differential allocation of effort, the ordinary allocation of effort is 40% teaching/advising, 40% scholarship, and 20% service.

The Department has defined its standards and expectations for teaching/advising, scholarship, and service in its [annual evaluation procedures](#). The expectations for post-tenure review are consistent with these standards, with overall productivity commensurate to the seven-year period under review. The following specific criteria

shall apply for purposes of post-tenure review.

A. Criteria for Meeting Expectations in Teaching/Advising

Tenured faculty members are expected to teach three courses per academic year. They are also expected to advise and/or mentor undergraduate and graduate students. Faculty members should have a consistent record of satisfactory student evaluations. Further evidence of successful teaching can be supplied by peer evaluations. Serving on or chairing M.A. and Ph.D. committees, offering reading courses, and participating in the development of new courses are other ways to demonstrate active involvement with teaching and advising.

B. Criteria for Meeting Expectations in Research and Creative Activity

Tenured faculty members should demonstrate a consistent record of scholarly activity during the previous seven-year period that is commensurate with the expectations of their rank. Examples of scholarly activity include regular publication of scholarly articles, books or other reports; attendance at regional, national or international professional meetings; active participation in local seminars, workshops and conferences. Hosting short-term visitors and mentoring postdocs are also other forms of scholarly activity that contribute to a faculty member's research profile. Faculty members should also have an articulate plan of research and scholarly activities that will carry them forward during the next seven-year evaluation period.

C. Criteria for Meeting Expectations in Service

Tenured faculty members are expected to provide service to the Department by working effectively on departmental committees. Faculty should also serve the profession in various ways that include refereeing and/or reviewing journal articles, refereeing grant proposals, participating in activities of professional societies, serving on editorial boards, and organizing meeting, conferences or workshops. Service on College and University committees contributes substantially to a faculty member's service record.

IV. RELATION TO THE ANNUAL EVALUATION

The Department's post-tenure review (PTR) of each faculty member will be done by a PTR committee and is separate from the annual evaluations.

The Chair will discuss the post-tenure review with the faculty member in conjunction with the annual review. This discussion should concentrate on the future professional development of the faculty member with an aim toward enhancing meritorious work and improving less satisfactory performance, including adoption of a performance improvement plan, if necessary. Any action on the review that is within the scope of the Faculty Evaluation Policy must be taken under that policy.

V. JOINT APPOINTMENTS

The faculty member will provide both units with copies of the Faculty Member's Statement section of the Post-Tenure Review File (reflecting the representative effort in each unit) and a current curriculum vitae. The review goes forward with each unit preparing a separate committee evaluation summary and considerations by each chair and/or director to the dean. Each unit will submit their review materials directly to the

College Dean's Office. In the case of a jointly appointed faculty and unclassified academic staff member outside of the College, the primary unit is responsible for the administrative protocols of engaging the secondary unit in the solicitation and collection of feedback relative to the evaluation of performance expectations in the secondary unit.

#### VI. REVIEW COMMITTEE

A Post-tenure Review (PTR) Committee, which shall consist of three tenured faculty members, will be formed for each faculty member under review. The members of the PTR committee shall be chosen by the department chair in consultation with the faculty member under review. The PTR committee will contain at least one person in or closely related to the faculty member's research area. If appropriate, there may be some overlap between the different PTR committees. The department chair will serve as an additional (non-voting) member of each PTR committee.

No person may serve on any PTR committee during the year he or she or his or her spouse or partner is scheduled for review. If the chair/director is the spouse or partner of the faculty member under review, the "Chair or Director Evaluation Summary" shall be conducted by the Divisional Associate Dean. A committee member who believes that there may be a conflict of interest should withdraw from the committee. If a faculty member who is undergoing review believes that there is a conflict of interest, he or she may object to the inclusion of a member. If the member declines to withdraw, the remaining committee members (including the Chair, who will have a vote in this particular instance) shall consider the basis for the alleged conflict and decide the matter. A full professor may elect to be evaluated by a PTR committee of full professors. If a committee member withdraws or is removed based on a conflict of interest, the Chair will name a replacement.

#### VII. PREPARATION OF THE FILE

Review will be conducted on the basis of a file that summarizes a faculty member's teaching/advising, scholarship, and service. In contrast to evaluation for promotion and tenure, copies of publications and original student evaluations are not required. Also, outside reviews of scholarship should not be submitted.

Using the Faculty Member Statement, the faculty member under review shall provide a brief narrative statement of his or her accomplishments in teaching/advising, scholarship, and service during the review period as they relate to his or her long-term career path and goals. In addition, the faculty member shall submit a current curriculum vitae and a list of additional activities not covered on the curriculum vitae. The Chair will furnish copies of the faculty member's annual evaluation letters for the six years during the review period.

#### VIII. EVALUATION AND REPORT

The committee will review the file and evaluate the faculty member's overall performance and his or her contributions in the areas of teaching, scholarship, and service. Applying the expectations defined above, the committee will determine whether the faculty member's performance in each area, as well as whether his or her overall performance meets expectations, exceeds expectations, or fails to meet expectations. In making its evaluations, the committee must bear in mind that (1) faculty members have differing responsibilities and make different kinds of

contributions to the mission of the Department, the College, and the University; (2) a faculty member's activities vary over time according to his or her strengths, interests, and career path; and (3) innovative work may take time to reach fruition and may sometimes fail.

Using the [Unit Committee Report](#), the committee will prepare a written report summarizing its evaluation. The report should provide a narrative description of the faculty member's activities, an explanation of the committee's ratings, and recommendations or suggestions for acknowledgement of contributions and future development of the faculty member. The committee will provide a copy of the report to the faculty member, who may submit a written response for inclusion in the post-tenure review file before it is forwarded to the Chair.

#### IX. CONSIDERATION BY THE CHAIR

The committee's report (along with any faculty response) will be provided to the Chair. Using the [Chair/Director Evaluation Summary](#), if the Chair agrees with the report, he or she will indicate that agreement in writing to the faculty member and place a copy in the post-tenure review file. If the chair or director disagrees with the committee's evaluation, he or she shall explain the reasons for any disagreement in writing, with a copy to the faculty member and the committee. The Chair may ask the committee to provide additional information or reconsider the review. If the Chair disagrees with a positive evaluation by the committee, the faculty member may submit a written response. The Chair will forward the file to the dean of the College. Post-tenure review files are due in the College Dean's Office by no later than noon, on the second Friday of March.

#### X. CONSIDERATION BY THE DEAN

The faculty member's post-tenure review file, including the unit committee's report (along with any faculty response) and the Chair's agreement or disagreement, is forwarded to the dean. Post-tenure review files are due in the College Dean's Office by no later than noon, on the second Friday in March. The dean will consider the report and using the [Dean's Evaluation Summary](#), express his or her agreement or disagreement in the same manner as the Chair. Following the completion of review by the dean, if the dean agrees with the report, he or she will indicate that agreement in writing to the faculty member and place a copy in the file. If dean disagrees with the committee's evaluation, he or she shall explain the reasons for any disagreement in writing, with a copy to the faculty member and the PTR committee. The dean may ask the committee to provide additional information or reconsider the review. If the dean disagrees with a positive evaluation by the unit committee, the faculty member may submit a written response. The dean will forward a summary of post-tenure review outcomes and copies of the post-tenure review files to the Provost, to ultimately be placed in the faculty member's personnel file.

#### XI. APPEALS

Following the completion of the review by the dean, if a disagreement between the committee and the Chair or dean cannot be resolved or if the faculty member wishes to appeal an evaluation of "fails to meet expectations" in the overall evaluation or any category of responsibility, the matter will be handled as an appeal under the [Department's annual Faculty Evaluation Policy](#).

## XII. REPORT TO THE PROVOST

The dean will provide a summary of the results in the College and copies of the post-tenure review file to the Provost. The post-tenure review file will be placed in the faculty member's personnel file.

## **PART 9: ADVANCED DEGREES IN MATHEMATICS**

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The Department of Mathematics offers the degrees of Master of Arts (M.A.) and Doctor of Philosophy (Ph.D.). The regulations and requirements concerning these degrees are established partly by the Graduate School and partly by the Department of Mathematics.

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### **MISSION STATEMENT FOR THE GRADUATE PROGRAM OF THE DEPARTMENT OF MATHEMATICS**

The mission of the Graduate Program of the Department of Mathematics is to prepare students for leadership roles in meeting the mathematical needs of our society and to produce professional mathematicians with M.A. or Ph.D. degrees for positions in universities, colleges, industry, governmental agencies, and research centers.

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### **GRADUATE SCHOOL REQUIREMENTS FOR THE M.A. DEGREE**

(As abstracted from the 2019-20 online Academic Catalog (catalog.ku.edu).)

#### **Program Time Constraints**

Normal expectations are that most master's degrees (excluding some professional terminal degrees) should be completed in two years of full-time study. However, master's degree students are allowed seven years for completion of all degree requirements.

In cases in which compelling reasons or circumstances recommend a one-year extension, the Graduate Division, on recommendation of the department/committee, has authority to grant the extension. In cases where more than eight years are requested, the appropriate appeals body of the school considers petitions for further extensions and, where evidence of continuous progress, currency of knowledge, and other reasons are compelling, may grant them.

#### **M.A. Degrees**

A Master of Arts degree requires at least one year of graduate work or its equivalent. Stated in terms of hours of credit, the standard master's program requires 30-36 hours. With permission of the department and of the Graduate Division, it is sometimes possible to complete a 30-hour master's degree with as few as 24 hours if the student enters the program especially well prepared and maintains a superior grade-point average. (Note: a petition must be submitted for a reduced-hour degree prior to beginning MA coursework, see the department's COGA advisor for details.) Work for a master's degree is concentrated in the major area, with only a minimal amount of work (usually no more than 6 hours) that is completed at KU permitted outside the major department. Each master's program must contain a research component, represented either by a thesis (usually for 6 hours of credit) or by an equivalent enrollment in research, independent investigation, or seminars. Within these requirements and well-founded practices, departmental master's programs may be flexible enough to meet the particular needs of individual students.

#### **Master's Final Examinations**

A final general examination or defense of the thesis or culminating master's project in the major subject is required of all candidates for the Master of Arts or Master of Science. The degree program and the Graduate Division should ascertain that the graduate student is in good academic standing (3.0 or higher grade-point average) before scheduling the final general examination or thesis defense.

At the option of the department, the examination may be oral or written, or partly oral and partly written. In some departments, passing a written examination is a necessary preliminary to taking the oral examination by which success or failure is judged.

Master's examinations are administered by a committee of at least three members of the Graduate Faculty. Exam attendance is governed by the [Graduate Student Oral Exam Attendance](#) policy.

The examination is held during the semester of the student's final enrollment in course work. The thesis defense should be held when the thesis has been substantially completed.

The department's request to schedule the general examination must be made on or before the date set by the Graduate Division, normally a minimum of two weeks before the examination date.

Students earning a master's thesis degree must have completed at least one hour of thesis enrollment before the master's degree may be awarded. See the [Graduate Studies website](#) for information and requirements for submitting the thesis electronically.

### **Master's Student Oral Exam Committee Composition**

When the master's student final examination is partly or entirely oral (i.e., thesis defense), the oral portion of the examination must be conducted by a committee which meets the following conditions.

1. Master's committees are composed of at least three voting members.
2. Two committee members serving on a master's student oral examination committee must be tenured/tenure-track faculty holding the appropriate graduate faculty privilege in the candidate's department/program of study. Tenured/tenure-track faculty who are appointed as courtesy faculty within the program/department are considered (for the purposes of committee composition) to be faculty of that program/department.
3. The third member can be, but need not be, a member of the candidate's department/program.

As long as the conditions above are met, the committee may include more than three members.

While master's committees are not required to have a co-chair, the student or the committee members may decide to select a co-chair. The department's COGA advisor will work with you to ensure your committee members hold the appropriate privileges in the Graduate Faculty

Substitutions of the committee chair (and/or co-chair) are prohibited after the committee has been approved by the Graduate Division of the school or college. If a committee chair (and/or co-chair) needs to be replaced, the revised committee must be approved by the Graduate Division of the school or college in advance of the exam.

Substitutions of the committee members are permitted as long as the new members hold the appropriate Graduate Faculty privilege. The Graduate Director and the department's COGA advisor should be notified of all committee changes in advance.



### **Master's Thesis Submission**

When the master's candidate has passed the final oral examination and the members of the committee have signed the thesis, a title page and acceptance page with original signatures are to be delivered to the Graduate Division of the school in which the student's program resides so that completion of degree requirements may be officially certified. As a requirement of graduation, the candidate must publish the thesis electronically and pay all applicable fees. Learn more about the electronic submission and publication process [here](#).

**Theses will be made available through UMI/Proquest and KU ScholarWorks, unless there is an embargo in place or special circumstances pertain as outlined in the KU Embargo policy.**

The student must be the author of the thesis, and every publication from it must indicate that authorship. Practices vary among disciplines—and even among scholars in a given field—as to whether the mentor's name may appear as a co-author, and whether as senior or junior author co-author, on subsequent publication of the thesis (usually revised), or on articles prepared from it. It is expected that clear understandings in individual cases will be established during the apprenticeship period, when ethical practices in publication are addressed within the professional development training of the program.

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## **DEPARTMENTAL REQUIREMENTS FOR THE M.A. DEGREE**

A student must fulfill the general requirements of the Graduate School and complete one of the following options.

- (1) Pass one qualifying examination in algebra or analysis, and one in probability/statistics or numerical analysis, and complete 30 hours of 700 or above level courses of which 12 hours are 800 or above.
- (2) Complete 30 hours of courses and pass an oral examination. These courses must include MATH 800, 810, 820, 830, 831. At least 9 of the remaining 15 hours must be from courses numbered 700 or above. These additional hours may include the enrollment credit (a minimum of 2 hours and a maximum of 6 hours) used to fulfill a research component, e.g., enrollment in MATH 896, 899, 990, 993 or advanced courses. An M.A. candidate must demonstrate an ability to communicate mathematics both orally and in written form. In particular, an M.A. candidate not selecting the thesis option (MATH 899) will be expected to write a technical report as part of his or her research component. Also, a candidate will be required to give a short (30 to 60 minutes) presentation of his or her research component in the first part of the oral examination.
- (3) Complete 36 hours of courses numbered 600 or above, complete a research component, and pass an oral examination. These courses must include MATH 727, 765, 781, 790 and 791. At least 24 of the 36 hours must be in courses numbered 700 or above. Course equivalents to MATH 727, 765, 781, 790, 791 may be substituted if approved by the Graduate Studies Committee. An M.A. candidate may, with prior approval of the Graduate Director, substitute up to 9 hours of graduate courses taught in other departments. Also, the 36 hours may include the enrollment credit (a minimum of 2 hours and a maximum of 6 hours) used to fulfill a research component e.g., enrollment in MATH 896, 899, 990, 993 or advanced courses. An M.A. candidate must demonstrate an ability to communicate mathematics both orally and in written form. In particular, an

M.A. candidate not selecting the thesis option (MATH 899) will be expected to write a technical report as part of his or her research component. Also, a candidate will be required to give a short (30 to 60 minutes) presentation of his or her research component in the first part of the oral examination.

A proposed program of study must be submitted to the Graduate Director at the earliest feasible time—preferably during the second semester of enrollment. The degree will be awarded only on the basis of an approved program, which can, however be revised.

In exceptional cases a few semester hours of credit (a maximum of 6) may be transferred from another university and counted as part of the semester hour requirement for the M.A. degree. All transferred credit hours are subject to the approval of the Graduate Studies Committee.

A graduate student must maintain at least a B average in his or her graduate courses to be in good standing. The grading system of the Graduate School is explained in Error! Reference source not found..

The Application for Degree (AFD) should be submitted online through Enroll and Pay. This is commonly done during enrollment for the session in which the requirements for the degree are expected to be completed.

The written qualifying examinations required for Option 1 are described in the section “Departmental Requirements For The Ph.D. Degree”. The oral examination required for Options 2 and 3 is scheduled by the individual student near the time of completion of the course work for the degree. The oral examination will cover the candidate's course work in mathematics (including the thesis or research component). The student should notify the Graduate Director of his or her intention to take the oral examination at least three weeks prior to the time he or she wishes to take this examination. The Graduate School sets deadlines for completion of all requirements, including the oral examination, for August, May or December graduation.

A student choosing Option 2 or 3 must select a member of the senior faculty to supervise his or her research component. A non-thesis research component usually consists of research, independent investigation (e.g., reading a mathematics research article), or research seminars. A technical report is normally required. Other non-thesis research components are possible and can be designed by the student and the supervisor with the approval of the Graduate Studies Committee. The thesis usually contains an original exposition of a topic in mathematics rather than an original contribution to knowledge. If a thesis is written, the oral examination will not be scheduled until the thesis is complete. The student must submit the thesis to the supervisor and the examining committee at least two weeks before the oral examination.

Option 3 is designed to meet the needs of a wide variety of students, including those who intend to teach or to work in government or industry after completing their master's degree and those who intend to pursue further graduate study in the mathematical, the natural, or the social sciences. Students electing this option are encouraged to take courses offered by other departments in areas of applied mathematics.

A great variety of course programs is possible under Option 3 and the program selected by a particular student will depend both on his or her educational goals and on the current availability of courses. In general, the student's program must have a coherent theme and must be appropriate as a master's level program in its particular area of mathematics. While many students under Option 3 choose to focus on an area of pure mathematics, there is great

flexibility.

Possible programs include the following:

A student interested in an applied statistics or applied mathematics can emphasize linear models, time series analysis, numerical analysis, computational statistics, or actuarial science.

A student wishing to earn a master's degree in mathematics with emphasis in mathematics education can choose from a wide variety of pure and applied mathematics courses.

A student interested in statistics can construct a program including work in both theoretical and applied statistics, together with some training in computing and in probability theory and abstract mathematics.

A student interested in concurrent or subsequent graduate work in any of a variety of areas can select a program leading to an M.A. in Mathematics which would simultaneously deepen his or her mathematics background and help prepare the student for further work in the area of application. For example, it is possible to construct programs which combine mathematics with the following areas:

- (i) operations research with courses in probability theory, mathematical programming and statistics in both the Mathematics Department and the Business School,
- (ii) mathematical biology or biostatistics with courses in probability theory, statistics, real analysis, and differential equations plus courses in genetics and applied statistics in the Division of Biological Sciences,
- (iii) mathematical economics with courses in analysis and differential equations plus courses in theoretical economics,
- (iv) econometrics with statistics and probability courses in the Mathematics Department plus economics courses in the Economics Department,
- (v) quantitative psychology with courses in statistics plus courses in psychological statistics, and
- (vi) a particular area of engineering, with appropriate mathematics courses; for example, classical applied mathematics courses for the area of civil engineering; or control theory, probability theory, and stochastic processes courses for the area of electrical engineering.

An M.A. program with emphasis in yet other areas of the science is, of course, also possible.

## THE MASTER'S EXAMINATION.

The Application for Degree (AFD) should be submitted online through Enroll and Pay. This is usually done during enrollment for the term in which requirements for the degree are expected to be completed. Students should consult the department's COGA advisor before filling out the Application for Degree to confirm that they will have completed all degree requirements.

A student choosing Option 2 or Option 3 should inform the department's COGA advisor at least three weeks before scheduling the master's examination. The COGA advisor will see to it that the necessary Progress to Degree forms are executed. In order to graduate in August, May or December, the examination must be taken before the Graduate School deadline.

A student writing a thesis should consult the Graduate School's website for instructions to electronically submit the thesis at <http://graduate.ku.edu/electronic-thesis-and-dissertation>.

Following the examination, the chair of the examination committee completes and signs the Progress to Degree form and returns it to the department's COGA advisor.

## SUMMARY OF MASTER'S REQUIREMENTS

Option	Total No. of Credit Hrs	Course Level	Courses Required	Research Component	Exams
1	30	700 and above  At least 12 hours at 800 level or above			Qualifying exams in algebra or analysis <u>and</u> one in probability/statistics or numerical analysis.
2	30	700 and above	800, 810, 820, 830, 831	2-6 hours (896, 899, 990, 993, etc...)  Projects	Oral Exam
3	36	600 and above  At least 24 hours at 700 level or above	727, 765, 781, 790, 791	2-6 hours (896, 899, 990, 993, etc...)  Project or Thesis	Oral Exam or Thesis Defense
<p>Per KU policy, GRAs and GTAs must be enrolled in at least six credit hours in fall and spring.</p> <p>Per KU policy, non-GTA/GRA international students must be enrolled in at least nine hours in fall and spring.</p> <p>For complete enrollment requirements, see <a href="https://catalog.ku.edu/graduate-studies/#regulationstext">https://catalog.ku.edu/graduate-studies/#regulationstext</a> .</p>					

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## THE PH.D. PROGRAM

The rules, regulations, and requirements for the doctoral program are somewhat more detailed. Before laying them out in a detail we give an informal summary.

The major checkpoints of one's progress toward a Ph.D. are:

- (i) The departmental written qualifying examinations
- (ii) Selecting an advisor
- (iii) The preliminary examination
- (iv) Coursework requirements before the oral examination
- (v) The Research Skills and Responsible Scholarship requirements
- (vi) The comprehensive oral examination
- (vii) Additional coursework
- (viii) The dissertation
- (ix) The final examination

The comprehensive examination follows soon after the passing of the preliminary examination. Before the comprehensive can be scheduled, the preliminary examination must be passed, the Research Skills and Responsible Scholarship requirements met, and certain course work required by the department completed.

When the student passes the comprehensive, his or her dissertation committee is established and more specialized individual research activities predominate. Upon the completion of an acceptable dissertation, the final examination is scheduled; its name states its role--the final step towards the degree.

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## GRADUATE SCHOOL REQUIREMENTS FOR THE PH.D. DEGREE

(As abstracted from the 2019-20 online Academic Catalog (catalog.ku.edu).)

The degree of Doctor of Philosophy (Ph.D.) is the highest degree offered by the university. It is awarded for mastering a field of scholarship, for learning the methods of investigation appropriate to that field, and for completing a substantial piece of original research. In addition to preparing research specialists, the process of earning a Ph.D. shares certain goals with liberal education: putting order into human experience; fostering a love of learning for its own sake; instilling respect for human values; integrating various human powers into a process of creation; and making vital, in many fields at least, a sense of history.

Although the courses and research leading to the Ph.D. are necessarily specialized, the attainment of this degree should not be an isolated event in the enterprise of learning. The Ph.D. aspirant is expected to be a well-educated person with a broad base of general knowledge, not only as preparation for more advanced work but also as a means of knowing how the chosen specialty is related to other fields of human thought.

To give depth and breadth to their doctoral programs, many departments require some work in a minor field or at least an articulated selection of extra-departmental courses. Because of the

diversity of the fields in which the Ph.D. is offered, and the variety of needs and interests of individual students, the degree does not have a specific requirement for a minor. However, the Ph.D. aspirant is encouraged to plan an integrated program, under departmental direction, that includes courses outside the major field.

## 1. APPLICATION AND ADMISSION

A student who seeks admission to a doctoral program must apply to the graduate degree program and school offering the desired degree. Upon admission, the student is known as an aspirant for the degree and remains so designated until successful completion of the comprehensive oral examination. After passing that examination, the student is designated a candidate for the degree.

## 2. PROGRAM TIME CONSTRAINTS

**Minimum Tenure.** The student must spend three full academic years, or the bona fide equivalent thereof, in resident study at this or some other approved university, including the time spent in attaining the master's degree. Resident study at less than full time requires a correspondingly longer period, but the requirement is not measured merely in hours of enrollment. Because a minimum number of hours for the degree is not prescribed, no transfer of credit is appropriate. However, doctoral degree programs take relevant prior graduate work into consideration in setting up programs of study leading to the doctorate.

**Maximum Tenure.** After being admitted to doctoral programs at KU, students must complete all degree requirements in 8 years. In cases in which compelling circumstances recommend a 1-year extension, the Graduate Division has authority to grant the extension on the written advice of the department and dissertation committee. Students who complete the master's degree at KU and subsequently begin doctoral studies have a maximum total enrolled time of 10 years to complete both degrees. Normal expectations, however, are that most master's degrees (excluding some professional terminal degrees) should be completed in 2 years of full-time study, and both master's and doctorate degrees in 6 years of full-time study. Some graduate degree programs may have more stringent time restrictions. Students should inquire about the policy in effect in the department in which they plan to study.

During any phase of doctoral education, a student in any of the above categories may petition the Graduate Division, through the department, for a leave of absence to pursue full-time professional activities related to the doctoral program and long-range professional goals. Leaves of absence also may be granted because of illness or other emergency. Ordinarily a leave of absence is granted for 1 year, with the possibility of extension upon request. After an absence of 5 years, however, a doctoral aspirant or candidate loses status as such and must apply for readmission to the program and the Graduate Division. Please see the [Leave of Absence](#) policy for more information.

**Residence Requirement.** Two semesters, which may include one summer session, must be spent in resident study at KU. During this period, the student must be involved full time in academic or professional pursuits, which may include an appointment for teaching or research if it is directed specifically toward degree objectives. Enrollment in approved distance-learning courses offered through KU cannot be used to meet the doctoral residence requirement. The student must be enrolled in a minimum of six credit

hours a semester, and the increased research involvement must be fully supported and documented by the dissertation supervisor as contributing to the student's dissertation or program objectives. Research must be performed under the direct supervision of the major adviser if on campus, or with adequate liaison if off campus.

### 3. RESEARCH SKILLS AND RESPONSIBLE SCHOLARSHIP

All doctoral students must meet the Research Skills and Responsible Scholarship requirement before proceeding to comprehensive exams. The requirement must include at least two components:

- (a) Every doctoral student is required to obtain research skills pertinent to the doctoral level of research in their field(s).
- (b) Every doctoral student is required to have training in responsible scholarship pertinent to the field of research.

### 4. COMPREHENSIVE ORAL EXAMINATION

When a doctoral aspirant has completed the major portion of the course work at a level satisfactory to the graduate degree program and school and has met all other program, school and general requirements prerequisite to the comprehensive oral examination, including the research skills requirement as appropriately applied and established for the student's particular program, the degree program must request the Graduate Division of its school to schedule the comprehensive oral examination. The examination may be scheduled provided that at least 5 months have elapsed from the time of the aspirant's first enrollment at KU. Before scheduling the examination, it should be determined that the student is in good academic standing (3.0 or higher grade-point average). The examination request must be submitted in advance of the examination date by at least the period specified by the graduate division, normally a minimum of two weeks. The Graduate Division ascertains whether all pertinent requirements have been satisfied and whether reports of any previously scheduled comprehensive oral examinations have been properly submitted and recorded.

The committee for the comprehensive oral examination must consist of at least five members, all of whom must be members of the Graduate Faculty. Its members are appointed by the Graduate Division of the school or college on the basis of nominations submitted by the graduate degree program. At least one member must be from a department other than the aspirant's major department. This member represents Graduate Studies and must hold the appropriate privilege on the Graduate Faculty. The Graduate Studies representative is a voting member of the committee has full right to participate in the examination. The department's COGA advisor will work with you to ensure your committee members hold the appropriate privileges in the Graduate Faculty. In the case of any unsatisfactory or irregular aspects of the exam or violation of Graduate Studies policy, the Graduate Studies representative shall provide a written report to the Dean of Graduate Studies for consideration of further action. The examination may be scheduled provided that at least five months have elapsed from the time of the aspirant's first enrollment at KU.

The comprehensive oral examination covers the major field and any extra departmental work for which the program wishes to hold the aspirant responsible. For every scheduled

examination, the degree program reports a grade of Honors, Satisfactory, or Unsatisfactory. If the aspirant receives a grade of Unsatisfactory on the comprehensive oral examination, it may be repeated upon the recommendation of the degree program, but under no circumstances may it be taken more than three times. In any case, departments, schools, and the College will determine appropriate minimum intervals between attempts.

## 5. CANDIDACY

**Dissertation Committee:** Upon passing the comprehensive oral examination, the aspirant becomes a candidate for the doctorate. If it has not begun before, the traditional, close student-mentor apprenticeship relationship comes into being. The student is expected to learn by both precept and example of the mentor, and often in collaboration. The chosen field of scholarship is explored using acquired research tools. The principles and customs of academic inquiry and the codes of ethics traditional to the various disciplines and professional fields become part of the student's thinking and working.

When the student passes the comprehensive oral examination, the Graduate Division of the appropriate school designates the candidate's dissertation committee based on the recommendations of the candidate's major department. The dissertation committee must consist of at least five members and may include members from other departments and divisions or, on occasion, members from outside the university. All members of the committee must be chosen from the Graduate Faculty, and, in addition, the committee chair must be authorized to chair doctoral dissertations. (In other words, the committee chair must hold Dissertation status on the Graduate Faculty.) A prospective member of the committee from outside the university must have gained appointment as a Special member of the Graduate Faculty before appointment to the committee.

**Post-comprehensive Enrollment:** Doctoral candidates are required, after passing the comprehensive oral examination, to be continuously enrolled each fall and spring semester in one or more hours of dissertation or programmatically-equivalent coursework (for example, document hours for DMA students) that both moves the student towards degree completion and reflects, as accurately as possible, the candidate's demands on faculty time and university facilities. During this time, until all requirements for the degree are completed (including the filing of the dissertation) or until 18 post-comprehensive hours have been completed (whichever comes first), the candidate must enroll for a minimum of 6 hours each semester.

Post-comprehensive enrollment may include enrollment during the semester or summer session in which the comprehensive oral examination has been passed. If after 18 hours of post-comprehensive enrollment the degree is not completed, the candidate must continue to enroll each semester until all degree requirements have been met. The number of hours of each enrollment must be determined by the candidate's advisor and must reflect as accurately as possible, the candidate's demands on faculty time and university facilities.

## 6. DISSERTATION COMMITTEE/DISSERTATION

The doctoral candidate must present a dissertation showing the planning, conduct and results of original research and/or scholarly creativity. The purpose of the dissertation is to encourage and ensure the development of broad intellectual capabilities and to demonstrate an intensive focus on a problem or research area. The dissertation itself



should be an evident product of the candidate's growth and attainment of the ability to identify significant problems; organize, analyze and communicate scholarly results; and bring to bear on an area of scholarly or scientific interest a variety of research skills and scholarly or creative processes. The dissertation must show some original accomplishment, but it should also demonstrate without doubt the candidate's potential to make future contributions to knowledge and understanding.

The dissertation is to be a coherent scholarly work, not a collage of separate, distinct pieces. Its unity of theme and treatment may still accommodate several subtopics by demonstrating their relationships and interactions. If previously published material by other authors is included in the dissertation, it must be quoted and documented. Final acceptance of the dissertation is subject to the approval of the dissertation committee. It should be noted that prior publication does not guarantee acceptance of the dissertation by the dissertation committee. The dissertation—or one or more substantial portions of it, often rewritten—is expected to be publishable and indeed to be published.

Both the dissertation research and the dissertation itself are to be completed under the guidance and direction of the committee appointed as described in the Graduate Student Oral Exam Committee Composition policy. Instructions about the proper form of the dissertation may be obtained at [www.graduate.ku.edu](http://www.graduate.ku.edu) or from the Graduate Division of each school/college. Candidates and faculty members are reminded that the dissertation is to be a coherent, logically-organized, scholarly document. Because the demands and practices of different disciplines are varied, the format is somewhat flexibly described, and moderate departures from the norm are allowed when justified by the nature of the work or the circumstances of presentation. Any substantial divergence must be approved in advance as prescribed by the instructions, and candidates and faculty members are urged to seek early approval to avoid last-minute disappointments over unacceptable format or reproduction.

## 7. FINAL ORAL EXAMINATION

Completion of the dissertation is the final academic phase of a doctoral program, culminating in the final oral examination and defense of the dissertation. In all but the rarest cases, tentative approval of the dissertation is followed promptly by the final oral examination. When the completed dissertation, in final draft form, has been accepted by the committee and all other degree requirements have been satisfied, the chair of the committee requests that the Graduate Division schedule the final oral examination. This request must be made in advance of the desired examination by at least the period specified by the Graduate Division (normally three weeks). Upon receipt of a request to schedule a final oral examination, the Graduate Division ascertains whether all other degree requirements have been met and whether reports of any previously scheduled final oral examinations have been submitted and recorded. Upon approval of the request, the final oral examination is scheduled at the time and place designated by the Graduate Division. The final oral examination may be held no earlier than 1 month after the successful completion of the comprehensive oral examination. Departments, programs, schools, or the College may require a longer minimum interval between the oral comprehensive exam and the final dissertation defense.

Doctoral dissertation defenses are considered public events. Therefore, the submission of a request to schedule a final oral examination must allow sufficient time to publicize the examination so that interested members of the university community may

attend. Exam date and location information must be published in a news medium as prescribed by the Graduate Faculty. Interested members of the university community are encouraged to attend these examinations.

As described in the [Doctoral Student Oral Exam committee Composition](#) policy, the committee for the final oral examination must consist of at least 5 members. (These may include the members of the dissertation committee plus other members of the Graduate Faculty as recommended by the committee chair and the department and as appointed by the Graduate Division). At least 1 member must be from a department other than the major department. This member represents Graduate Studies and must hold the appropriate privilege on the Graduate Faculty. Before the examination, the Graduate Division provides a list of responsibilities to the Graduate Studies representative. The Graduate Studies representative is a voting member of the committee and has full right to participate in the examination. In the case of any unsatisfactory or irregular aspects of the exam or violation of Graduate Studies policy, the Graduate Studies representative shall provide a written report to the Dean of Graduate Studies for consideration of further action.

For every scheduled final oral examination, the department reports to the Graduate Division a grade of Honors, Satisfactory, or Unsatisfactory for the candidate's performance. If an Unsatisfactory grade is reported, the candidate may be allowed to repeat the examination on the recommendation of the department.

## 8. DISSERTATION SUBMISSION AND PUBLICATION

When the candidate has passed the final oral examination and the dissertation committee have signed the dissertation, a title page and acceptance page with original signatures are to be delivered to the Graduate Division of the school/college in which the student's program resides so that completion of degree requirements may be officially certified. As a requirement of graduation, the candidate must arrange for electronic publication of the dissertation and payment of all applicable fees. Information about the electronic submission and publication process is found on the [KU Graduate Studies website](#).

**Dissertations will be made available through ProQuest and KU ScholarWorks, unless there is an embargo in place or special circumstances pertain as outlined in the [KU Embargo policy](#).**

The student must be the author of the dissertation, and every publication deriving from it must indicate that authorship. Practices vary among disciplines—and even among scholars in a given field—as to whether the mentor's name may appear as a co-author and whether as senior or junior co-author, on subsequent publication of the dissertation (usually revised), or on articles prepared from it. It is expected that clear understandings in individual cases will be established during the apprenticeship period, when ethical practices in publication are addressed within the professional development training of the program.

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## DEPARTMENTAL REQUIREMENTS FOR THE PH.D. DEGREE

### (a) THE QUALIFYING EXAMINATIONS IN MATHEMATICS

- (1) The Mathematics Department requires Ph.D. students to pass two qualifying exams: one exam in either algebra or analysis and another exam in either numerical analysis or probability/statistics. In other words, Ph.D. students must

choose one of the following four exam options.

- algebra and numerical analysis
- analysis and numerical analysis
- analysis and probability/statistics
- algebra and probability/statistics

The qual clock for students begins in a student's first semester in either the M.A./Ph.D. program or the Ph.D. program. Students must complete the qualifying exam requirement before the start of their fifth semester. Exceptions to this requirement will be granted only in very special circumstances.

Qual Coursework. Ph.D. students must pass MATH 727, MATH 765, MATH 781, and MATH 791 (or corresponding 800 level courses) with a grade of B or better or pass the corresponding qualifying exam. For example, MATH 800 or MATH 810 may substitute for MATH 765; MATH 830 may substitute for MATH 791; MATH 881 or MATH 882 may substitute for MATH 781; MATH 866 may substitute for MATH 727, etc. Any 800 level courses used to fulfill the qual course requirement must be passed with a grade of B or better. The qual course requirement must be met before taking the preliminary exam.

- (2) The qualifying examinations will be given near the beginning of each fall and spring semester. Both must be passed by the beginning of the fifth semester.
- (3) An outline of the topics to be covered in the written qualifying examinations can be found beginning on page 119.

(b) **SELECTING AN ADVISOR**

A Ph.D. student who has passed both of the qualifying examinations needs to select an advisor (if he or she has not already acquired one) to consult before completing the preliminary examination phase of the Ph.D. program. The Graduate Director will help the student in selecting an advisor. The student in consultation with the advisor must select either a pure mathematics track or applied mathematics track for the Ph.D. and start the process of selecting a broad area of specialization.

(c) **DEPARTMENTAL POLICY/PROCEDURE ON CHANGE OF ADVISORS**

**Rationale:** A graduate student may change his/her thesis advisor due to various circumstances, including but not limited to: the advisor leaving KU or retiring; the student's research diverging from the area of expertise of the advisor; or differences between the student and the advisor. Change of advisor is allowed even at a late stage of a student's graduate career.

**Policy/Procedure on Change of Advisors:** Once a student decides to change advisors, he/she may initiate the following process. The student must inform his/her current advisor and should inform the Director of Graduate Studies (DGS) of his/her intention to change advisors. In the event of disagreement on the part of the current advisor, the issue should be brought to the Chair. A change of advisors must not have any effect on the student's eligibility for GTA or departmental summer support. The Chair/DGS should make every reasonable effort to facilitate the change. The student is encouraged to seek advice from faculty members, peers, et al.

A student may approach and ask a faculty member to serve as his/her new advisor. Prior to making a decision and answering the student, the faculty member may consult the DGS and current advisor of the student for more information if necessary.

Depending on the circumstances, it may be appropriate for the current advisor and a graduate faculty member of the Mathematics Department to serve as co-advisors. In this case, the Mathematics Department should encourage this arrangement and the relevant parties should work out the details.

The student must inform the DGS when a decision on change of advisors has been made. The student must still meet all relevant degree requirements of the University, the College and the Department. In the event that the change of advisor occurs late in the student's graduate career, the student and the new advisor may request a modification of departmental requirements via petition to the Graduate Committee. The Graduate Committee will make a decision with a reasonable effort to facilitate a smooth transition.

(d) THE PRELIMINARY EXAMINATION IN MATHEMATICS

Upon passing the qualifying examinations and selecting an advisor, a Ph.D. student is required by the Department of Mathematics to pass one preliminary examination in the student's area of specialization. The preliminary examination may be written, oral, or a combination of both. A preliminary examination committee of at least three faculty members, including the advisor, will decide on the form of the exam, and give the student an outline of topics and suggested readings. The committee will then design the exam and evaluate the student's performance. A Ph.D. student must pass the preliminary examination by the beginning of the eighth semester. The advisor should inform the department's COGA advisor that the student has passed the preliminary examination.

(e) COURSEWORK REQUIREMENTS BEFORE THE ORAL COMPREHENSIVE EXAMINATION

In addition to the qual course work described in section (a), students in both the pure and applied track are required to complete significant course work at the 800 level or higher. This course work serves both to prepare the student for the oral comprehensive examination and to provide a broad background. All courses meeting this requirement must be passed with a grade of B or higher.

Students on the pure track must complete MATH 800, 810, 820 or 821, 830, and an approved course in geometry (e.g., MATH 840, 910, 920 or special topics in geometry).

Students on the applied track must complete MATH 800 and 810; one of the sequences 881-882, 865-866, or 850-851; and one of the 840, 850, or 950.

(f) RESEARCH SKILLS AND RESPONSIBLE SCHOLARSHIP

Students must satisfy the following Research Skills and Responsible Scholarship requirements before the oral comprehensive examination.

- (i) To meet the Research Skills requirement, students must complete an introductory programming language course approved by the graduate committee taken at this or at another university as a graduate or undergraduate. Students may meet the Research Skills requirement by passing EECS 138 or 168. Alternately,

students may complete a computing project approved by their advisor and the Graduate Studies Committee demonstrating competence in either a programming language or the use of specialized software that supports the student's research. A copy of the project together with a brief report written by the student summarizing the project and its relevance to the student's research should be endorsed by the student's advisor and submitted to the department's COGA advisor.

(ii) To meet the Responsible Scholarship requirement, students must follow the steps below.

- Students need to take an online tutorial offered by the Office of Research and Graduate Studies (e.g., the NSF online tutorial). (1 hour)

- At the beginning of the spring semester a seminar a graduate faculty member will offer a seminar to introduce the responsible scholarship topics that are relevant to mathematics. Students must complete the online tutorial prior to attending the seminar. Topics relevant for mathematics include issues related to:

- (a) Authorship, publication, plagiarism, copyright
- (b) Peer review, refereeing, grant proposal preparation
- (c) Professional practices
- (d) Conflict of interest
- (e) Maintenance of confidentiality
- (f) Student-mentor relations and responsibilities.

Seminar participants will receive a list of websites and other resources that include case studies, policies, etc. (2 hours)

- Students will further explore the topics introduced at the seminar by attending three one-hour one-on-one meetings with their advisor or other faculty members during the semester. During these meetings the student and his or her advisor will discuss items (a)-(e) above and the advisor will provide appropriate context for the issues under discussion. The student must write a short report summarizing each meeting. (3 hours)

- At the end of the spring semester, students must attend a concluding seminar and report on what each participant in the semester-long training has learned. The seminar will consist of short presentations by every participating graduate student followed by a group discussion led by a member of the graduate faculty. (3 hours)

#### (g) THE COMPREHENSIVE ORAL EXAMINATION IN MATHEMATICS

(1) Before taking the comprehensive oral examination in Mathematics a student must:

- (i) Satisfy the Graduate School requirements (See section **Advanced Degrees in Mathematics**, Error! Reference source not found.).
- (ii) Pass both qualifying examinations and qualifying coursework.

- (iii) Pass the preliminary examination.
  - (iv) Satisfy the Research Skills and Responsible Scholarship requirement.
  - (v) Satisfy the course requirements.
  - (vi) Select, in consultation with his/her advisor, an advisory committee consisting of the advisor and at least four other graduate faculty members. At least one member must be from another department.
- (2) Normally, the work required to prepare a student for the oral comprehensive examination (and to prepare a student to do research) will take the form of one or more semesters of advanced courses, directed readings, and seminars. In the examination a student will be required to show proficiency in his or her chosen area of mathematics. The subject matter and format will be determined by the student's advisory committee and must be communicated to the student in advance.

(3) Per University requirement, a student must take and pass the comprehensive oral examination at least one month before the final examination. (For the department, this means one month must elapse between the successful completion of the comprehensive oral examination and the date of the final defense.) A student who fails the comprehensive oral examination may retake it one time.

- (4) When a graduate student is ready to take the comprehensive oral examination, the student should arrange for a time and a place agreeable to his or her examination committee (the advisor and at least four other graduate faculty members with at least one member must be from another department). At least three weeks before the date of the examination, the student's advisor reports the exam schedule to the department's COGA advisor who will execute the necessary Progress to Degree form. This must be done at least three weeks before the date of examination.

Following the examination, the chair of the examination committee shall complete an Exam Outcome form provided by the COGA advisor who will then complete the Progress to Degree form for the College.

(h) **ADDITIONAL COURSEWORK**

The student must complete four additional courses at the 800 level or above before the Final Examination. Courses numbered 896, 899, 993 and 999 may not be used to satisfy this requirement. We recommend that all coursework be completed before the comprehensive examination.

(i) **THE DISSERTATION**

- (1) After passing the comprehensive oral examination, the doctoral candidate focuses on research activity.
- (2) The normal course load for a student working on a dissertation is one course, with the rest of the enrollment in dissertation. Students are strongly encouraged to broaden their background by taking advanced graduate courses in areas other than their specialization or to take graduate courses in new areas.
- (3) During this period, the student should be aware of the minimum and maximum

time constraints as described in the section PROGRAM TIME CONSTRAINTS.

(j) THE FINAL EXAMINATION

- (1) Students should consult the Graduate School guidelines for formatting and submission of PhD dissertations at <http://graduate.ku.edu/etd-formatting-and-working-multimedia-files>.
- (2) The arrangements for the examination should be made at least three weeks before the proposed date of the examination. The examination should be held and the dissertation should be filed with the Graduate Division of the College well in advance of the date of the conferral of the Degree (see Graduate School Calendar 2020-2021).

The committee chair recommends an examining committee and a time and place for the examination. The examination committee must consist of at least five members of the graduate faculty, including at least one member must be from a different department. The Graduate Director will execute a Progress to Degree form requesting the examination.

The dissertation should be made available to the examining committee at least two weeks prior to the examination.

Following the examination, the committee chair should complete the Exam Outcome form given to them by the COGA advisor who will then submit the Progress to Degree form to the College.

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## OUTLINE OF TOPICS FOR THE QUALIFYING EXAMINATIONS IN MATHEMATICS

- (1) The following is an outline of the topics to be covered in the written qualifying examinations in algebra:

INTEGERS.

1. GCD's.
2. LCM's
3. Unique factorization.

GROUPS.

1. Examples.
2. Subgroups.
3. Normal subgroups.
4. Quotient groups.
5. Homomorphisms.
6. Permutation groups.
7. Structure theorem for finitely generated abelian groups.

RINGS.

1. Examples.

2. Ideals.
3. Quotient rings.
4. Homomorphisms.
5. Euclidean domains.
6. Principal ideal domains.
7. Unique factorization domains.
8. Polynomial rings.

#### FIELDS.

1. Algebraic extensions.
2. Automorphisms of fields.
3. Transcendence degree.

#### LINEAR ALGEBRA.

1. Vector spaces, dual spaces, inner product spaces.
2. Orthonormal bases via Gram-Schmidt.
3. Linear transformations, eigenvalues, matrices.
4. Trace, determinant and canonical forms.
5. Operators on finite dimensional space (normal, hermitian, unitary).

Most of the material above will be covered yearly in MATH 790-791. References : *Linear Algebra*, Hoffman-Kunze (first nine chapters) and *Abstract Algebra*, I.N. Herstein.

- (2) The following is an outline of topics to be covered in the written qualifying examination in analysis:

#### ANALYSIS.

1. Metric spaces (rudimentary topology, including compactness; convergence of sequences; Cauchy sequences and completeness; continuous functions between metric spaces, uniform continuity).
2.  $\mathbb{R}$  and  $\mathbb{R}^n$  in particular (sup and inf for subsets of  $\mathbb{R}$ , lim sup and lim inf for real sequences; Heine-Borel theorem and its relatives).
3. Derivative (mean value theorem and Taylor's theorem for real functions on a real interval; derivative as linear map for vector-valued functions on an open subset of  $\mathbb{R}^n$ ; inverse function theorem and implicit function theorem for vector-valued functions).
4. Riemann integration for functions on a real interval.
5. Series (standard convergence results for series with constant terms; uniform convergence of sequences and series of functions; results on termwise integration and differentiation; power series).



6. Results on interchange of limiting operations (sums, derivatives, integrals, etc.), and examples to show that such interchange is not automatically valid.
7. Instructive examples generally.

One may expect a considerable portion of this material to be covered in MATH 765-766. References: *Introduction to Real Analysis*, Wade; *Principles of Mathematical Analysis*, Rudin.

- (3) The following is an outline of the topics to be covered in the written qualifying examination in numerical analysis:

Students considering taking the numerical analysis qualifier examination are advised to discuss their preparation with one of the numerical analysis faculty.

#### NUMERICAL ANALYSIS.

1. Computer arithmetic: floating-point arithmetic, rounding, error propagation, loss of significance, and conditioning.
2. Solution of nonlinear equations: iterative methods (bisection method, Newton's method, secant method), rates of convergence, functional iteration.
3. Interpolation and approximation of functions: polynomial interpolation, Lagrange's and Newton's forms, divided differences.
4. Numerical differentiation and integration: numerical differentiation and Richardson extrapolation, numerical integration based on interpolation, Romberg integration, adaptive quadrature.
5. Numerical solution of initial value problems of ordinary differential equations: Taylor-series methods, Runge-Kutta methods, multi-step methods, consistency, stability, convergence, stiffness, stiff equations, A-stability.
6. Linear algebra: vector and matrix norms, canonical forms for matrices (Schur normal form, singular value decomposition, and Jordan canonical form), conditioning of linear equations, eigenvalues and eigenvectors.
7. Solution of linear systems: direct methods (LU and QR factorization), iterative methods (Jacobi, Gauss-Seidel, SOR), and semi-iterative methods (Krylov subspace methods like conjugate gradients).
8. Computation of eigenvalues: power method, inverse iteration, Rayleigh quotients, QR algorithm.

Most topics are covered in the following two textbooks: *Numerical Analysis, Mathematics of Scientific Computing*, Kincaid and Cheney, Brooks/Cole Publishing Company, 1996, second edition. *An Introduction to Numerical Analysis*, K.E. Atkinson, John Wiley and Sons, 1988, second edition.

- (4) The following is an outline of the topics to be covered in the written qualifying examination in probability and statistics. Students must pass both parts of the exam at the same time.

#### PROBABILITY.

1. Probability spaces; conditional probability; independent events.

2. Discrete and continuous random variables; univariate and multivariate probability distributions; special distributions.
3. Expectation and moments of random variables; moment generating functions and characteristic functions.
4. Probability inequalities; modes of convergence for sequences of random variables; laws of large numbers; central limit theorem; Slutsky's theorem.

#### STATISTICS.

1. Point estimation, concepts and methods; comparison of estimators.
2. Sufficient statistics; completeness; Rao-Blackwell theorem tests of hypotheses; Neyman-Pearson lemma; uniformly most powerful tests; likelihood ratio tests.
3. Interval estimation, concepts and methods; relationships to hypothesis testing and point estimation.
4. Examples of applications.

Most of the material will be covered in MATH 727-728. References: *Modern Mathematical Statistics*, Dudewicz and Mishra; *Probability and Statistical Inference*, Bartoszynski and Niewiadomska-Bugaj; and *Statistical Inference*, Casella and Berger.

## SUMMARY OF PH.D. REQUIREMENTS

Track	Qual Courses Required	Courses Required	Exams	Research Skills	Enrollment Hours	Research Component
Pure	727 or Qual in Probability/Statistics  765 or Qual in Analysis  781 or Qual in Numerical Analysis	800, 810, 820 or 821, 830  One of 840, 910, 920  Four additional courses at 800 level or above.*  800, 810	Pass two quals, one in algebra or analysis and one in numerical analysis or probability and statistics by the beginning of the fifth semester.	Responsible Scholarship Training  Computer Skills	The Graduate School requires students to be enrolled in at least six hours per semester during two semester minimum residency.	Thesis
Applied	791 or Qual in Algebra  (with permission advanced students may substitute corresponding 800 level courses)	One of 850-851 or 865-866 or 881-882  One of 840, 850 or 950.  Four additional courses at 800 level or above.*	Preliminary by the beginning of the eighth semester.  Comprehensive Oral  Final Thesis Defense		Students who have completed 18 credit hours after oral comps need to enroll only in one hour per semester.	
<p>Per KU policy, GRAs and GTAs must be enrolled in at least six hours in fall and spring.</p> <p>Per KU policy, non-GTA/GRA international students must be enrolled in at least nine hours in fall and spring.</p> <p>For complete enrollment requirements, see <a href="https://catalog.ku.edu/graduate-studies/#regulationstext">https://catalog.ku.edu/graduate-studies/#regulationstext</a>.</p> <p>*Courses numbered 896, 899, 990, 993 and 999 may not be used to satisfy this requirement.</p>						

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## GRADUATE CERTIFICATE IN APPLIED MATHEMATICS

The Graduate Certificate in Applied Mathematics requires four graduate level courses (12 credits) and is designed for students who are currently pursuing a graduate degree in a discipline outside of mathematics to enhance their training in various aspects of applied mathematics. Examples include graduate students from the School of Engineering, Economics, Physics, Biology, Geology, Psychology etc.

The admission requirement for the program is the completion of two mathematics courses at level 600 or above with a minimum 3.0 GPA. These courses can then count towards the 12 credits required for the certificate.

The certificate requires the completion of four courses, at least two of them at the 700 level or above from the following list:

Math 601	Math 750
Math 605	Math 781
Math 611	Math 782
Math 630	Math 783
Math 647	Math 865
Math 648	Math 866
Math 650	Math 881
Math 724	Math 882
Math 725	
Math 727 (or Math 627)	
Math 728 (or Math 628)	

Interested graduate students can apply during the semester that they are completing the last course required for the certificate or earlier.

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## TERM LIMITS FOR APPOINTMENTS FOR GRADUATE TEACHING ASSISTANTS

The University of Kansas, Lawrence, has established upper limits on appointments for Graduate Teaching Assistants (GTAs) as specified below. Summer appointments are excluded from term limit calculations. No term limits established by the university or one of its departments, programs, professional schools, or the College constitutes a guarantee of funding for that amount of time. (<http://policy.ku.edu/graduate-studies/appointment-limit-GTA>)

In accordance with the provisions of the [Memorandum of Agreement \(MOA\)](#) between the University of Kansas, the Kansas Board of Regents, and the Graduate Teaching Assistants' Coalition, American Federation of Teachers -- Kansas (GTAC), a GTA who has exhausted the semester limits may be considered for appointment as a lecturer.

### **Program-Specific Requirements:**

Departments, programs, professional schools, and the College may establish shorter term limits for GTAs, as appropriate. Any such limit shall be codified in writing in the program's graduate handbook, the Academic Catalog, and/or the university's Policy Library and shall take precedence over the university's maximum limit.

### **Maximum Durations within a Single Department:**

- A student who is admitted to a graduate degree program to obtain only a master's degree is limited to six (6) semesters of GTA appointments.
- A student admitted to pursue only a doctorate or admitted to pursue more than one degree in a single department is eligible for up to a total of sixteen (16) semesters as a GTA. **The Mathematics Department's policy for GTA maximum limits for a Ph.D. degree is twelve (12) total semesters. Exceptions may be granted by the Department Chair.**
- A KU student may not serve more than sixteen (16) semesters as a GTA, except as described under "Clean Slates" below.

Students who have exhausted the University maximum time to complete a degree are not considered to be making [satisfactory academic progress](#). As a result, they are not eligible to serve as GTAs, even if a time-to-degree extension is granted. In exceptional circumstances, departments may petition for eligibility to serve as a GTA during a time-to-degree extension using the petition process described below.

### **Clean Slates for Students Pursuing Degrees in Multiple Departments:**

When a student is seeking graduate degrees in two or more departments, they may be eligible for full funding from each, in accordance with the per-department maximum durations above. (E.g., a student who works as a GTA for six (6) semesters while pursuing a master's degree in one department may, at the discretion of the new department, work for up to sixteen (16) additional semesters as a GTA, should they choose to pursue a degree in a different department.)

Students who return to the same department after time away (e.g., voluntary discontinuation, Leave of Absence, or break in enrollment after a completed Master's degree) will not have their eligibility reset to a clean slate.

In determining whether a person has met the limits described here, **all** semesters of GTA funding for a specific degree program shall be counted, regardless of which department hired the student as a GTA. When a student pursues two funded degree programs in different departments, the maximum limits will be calculated separately for each department.

### **Petitions:**

In exceptional circumstances, a department or program may, with the written support of the appropriate professional school or College, petition the Dean of Graduate Studies for an exception to the GTA term limits. Petitions may be granted when it is in the best **academic** interest of the student to extend the term limits or allow appointment as a GTA during a time-to-degree extension.

If a student has exhausted six (6) semesters of GTA employment prior to a change from a doctoral program to a master's program in the same department, the department may petition for additional semesters of GTA funding to support writing and degree completion, as appropriate.

**EXCLUSIONS OR SPECIAL CIRCUMSTANCES:**

This policy does not apply to summer-session GTA appointments.

Semesters in which a student's sole appointment was as a Graduate Research Assistant (GRA) or a Graduate Assistant (GA) do not count against the GTA's term limits.

All GTA appointments are made pursuant to the provisions of the [MOA](#).