Distance Learning Form

This form must accompany every submission of a new/change course form that requests distance learning delivery. This form may be required when changing a course already approved for DL delivery. All fields are required!

Introduction/Definition: For the purposes of the Commission on Colleges Southern Association of Colleges and Schools accreditation review, *distance learning* is defined as a formal educational process in which the majority of the instruction (interaction between students and instructors and among students) in a course occurs when students and instructors are not in the same place. Instruction may be synchronous or asynchronous. A distance learning (DL) course may employ correspondence study, or audio, video, or computer technologies.

A number of specific requirements are listed for DL courses. **The *department* proposing the change in delivery method is responsible for ensuring that the requirements below are satisfied at the individual course level.** It is the responsibility of the instructor to have read and understood the university-level assurances regarding an equivalent experience for students utilizing DL (available at http://www.uky.edu/USC/New/forms.htm).

Course Number and Prefix: MA 322 201	Date: February 4, 2010
Instructor Name: Paul E. Eakin	Instructor Email: paul@ms.uky.edu

Check the method below that best reflects how the majority of course of the course content will be delivered.

* Internet/Web-based ☒ Interactive Video ☐ Hybrid ☐

*Synchronous format using MathScience CENTRA System

	Curriculum and Instruction
1.	How does this course provide for timely and appropriate interaction between students and faculty and among students? Does the course syllabus conform to University Senate Syllabus Guidelines, specifically the Distance Learning Considerations? The course meeting format is essentially identical to the conventional, in-class format. It does conform to the Senate Guidelines.
2.	How do you ensure that the experience for a DL student is comparable to that of a classroom-based student's experience? Aspects to explore: textbooks, course goals, assessment of student learning outcomes, etc. All of these are identical to the in-class format.
3.	How is the integrity of student work ensured? Please speak to aspects such as password-protected course portals, proctors for exams at interactive video sites; academic offense policy; etc. Exams are on-campus, proctored. The Math Sciences WHS system is fully secure and handles daily instruction for most on-campus math classes.
4.	Will offering this course via DL result in at least 25% or at least 50%* (based on total credit hours required for completion) of a degree program being offered via any form of DL, as defined above? No If yes, which percentage, and which program(s)? *As a general rule, if approval of a course for DL delivery results in 50% or more of a program being delivered through DL, the effective date of the course's DL delivery will be six months from the date of approval.
5.	How are students taking the course via DL assured of equivalent access to student services, similar to that of a student taking the class in a traditional classroom setting? They will be assured the same student services access as in-class students.
	Library and Learning Resources

Abbreviations: TASC = Teaching and Academic Support Center DL = distance learning DLP = Distance Learning Programs

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6.	How do course requirements ensure that students make appropriate use of learning resources? All of the course materials are either in the textbook or are supplied online at not cost, as part of the course.
7.	Please explain specifically how access is provided to laboratories, facilities, and equipment appropriate to the course or program. The student's own computer provides all required laboratory facilities.
	Student Services
8.	How are students informed of procedures for resolving technical complaints? Does the syllabus list the entities available to offer technical help with the delivery and/or receipt of the course, such as the Teaching and Academic Support Center (http://www.uky.edu/TASC/index.php) and the Information Technology Customer Service Center (http://www.uky.edu/UKIT/)? Technical assistance is provided by UK Math Sciences. The systems used have integrated help systems & details, phone numbers, emails, etc. are provided at an on-campus orientation.
9.	Will the course be delivered via services available through the Teaching and Academic Support Center? Yes ☐ No ☒ If no, explain how students enrolled in DL courses are able to use the technology employed, as well as how students will be provided with assistance in using said technology. Students have acess to Math Sciences Technical Support
10.	Does the syllabus contain all the required components, below? ☐ Yes ☒ Instructor's *virtual* office hours, if any. ☒ The technological requirements for the course. ☐ Contact information for TASC (http://www.uky.edu/TASC/; 859-257-8272) and Information Technology Customer Service Center (http://www.uky.edu/UKIT/; 859-257-1300). ☒ Procedure for resolving technical complaints. ☒ Preferred method for reaching instructor, e.g. email, phone, text message. ☒ Maximum timeframe for responding to student communications. ☐ Language pertaining academic accommodations: o "If you have a documented disability that requires academic accommodations in this course, please make your request to the University Disability Resource Center. The Center will require current disability documentation. When accommodations are approved, the Center will provide me with a Letter of Accommodation which details the recommended accommodations. Contact the Disability Resource Center, Jake Karnes, Director at 859-257-2754 or jkarnes@email.uky.edu." ☐ Information on Distance Learning Library Services (http://www.uky.edu/Libraries/DLLS) o Carla Cantagallo, DL Librarian o Local phone number: 859 257-0500, ext. 2171; long-distance phone number: (800) 828-0439 (option #6) o Email: dllservice@email.uky.edu o DL Interlibrary Loan Service: http://www.uky.edu/Libraries/libpage.php?lweb_id=253&llib_id=16
11.	I, the instructor of record, have read and understood all of the university-level statements regarding DL. Instructor Name: Paul E. Eakin Instructor Signature: Paul Eakin 10/

Abbreviations: TASC = Teaching and Academic Support Center DL = distance learning DLP = Distance Learning Programs

COURSE CHANGE FORM

Complete 1a – 1f & 2a – 2c. Fill out the remainder of the form as applicable for items being changed.

1. General Information.

a. Submitted by the College of: Arts and Sciences | Today's Date: 3/11/2010

b. Department/Division: Mathematics

c. Is there a change in "ownership" of the course? YES ☐ NO ☒

If YES, what college/department will offer the course instead? _____

d. What type of change is being proposed? ☒ Major ☐ Minor[1] (place cursor here for minor change definition)

e. Contact Person Name: Russell Brown | Email: russell.brown@uky.edu | Phone: 73951

f. Requested Effective Date: ☒ Semester Following Approval OR ☐ Specific Term[2]: _____

2. Designation and Description of Proposed Course.

a. Current Prefix and Number: MA322 | *Proposed Prefix & Number:* _____

b. Full Title: Matrix Algebra and Its Applications | *Proposed Title:* _____

c. Current Transcript Title (if full title is more than 40 characters): MATRIX ALGEBRA & APPLS

c. *Proposed Transcript Title (if full title is more than 40 characters):* _____

d. Current Cross-listing: ☒ N/A OR Currently[3] Cross-listed with (Prefix & Number): _____

Proposed – ☐ *ADD[3] Cross-listing (Prefix & Number):* _____

Proposed – ☐ *REMOVE[3,4] Cross-listing (Prefix & Number):* _____

e. **Courses must be described by at least one of the meeting patterns below. Include number of actual contact hours[5] for each meeting pattern type.**

Current:	3.0 Lecture	_____ Laboratory[5]	_____ Recitation	_____ Discussion	_____ Indep. Study	
	_____ Clinical	_____ Colloquium	_____ Practicum	_____ Research	_____ Residency	
	_____ Seminar	_____ Studio	_____ Other – Please explain:	_____		
Proposed:	_____ *Lecture*	_____ *Laboratory*	_____ *Recitation*	_____ *Discussion*	_____ *Indep. Study*	
	_____ *Clinical*	_____ *Colloquium*	_____ *Practicum*	_____ *Research*	_____ *Residency*	
	_____ *Seminar*	_____ *Studio*	_____ *Other – Please explain:*	_____		

f. Current Grading System: ☒ Letter (A, B, C, etc.) ☐ Pass/Fail

Proposed Grading System: ☐ *Letter (A, B, C, etc.)* ☐ *Pass/Fail*

g. Current number of credit hours: 3.0 | *Proposed number of credit hours:* _____

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[1] See comment description regarding minor course change. *Minor changes are sent directly from dean's office to Senate Council Chair.* If Chair deems the change as "not minor," the form will be sent to appropriate academic Council for normal processing and contact person is informed.

[2] Courses are typically made effective for the semester following approval. No course will be made effective until all approvals are received.

[3] Signature of the chair of the cross-listing department is required on the Signature Routing Log.

[4] Removing a cross-listing does not drop the other course – it merely unlinks the two courses.

[5] Generally, undergrad courses are developed such that one semester hr of credit represents 1 hr of classroom meeting per wk for a semester, exclusive of any lab meeting. Lab meeting generally represents at least two hrs per wk for a semester for 1 credit hour. (See *SR 5.2.1.*)

COURSE CHANGE FORM

h. **Currently, is this course repeatable for additional credit?** YES ☐ NO ☒

Proposed to be repeatable for additional credit? YES ☐ NO ☐

If YES: Maximum number of credit hours: ____

If YES: Will this course allow multiple registrations during the same semester? YES ☐ NO ☐

i.	**Current Course Description for Bulletin:**	Algebra of matrices, elementary theory of vector spaces and inner product spaces, the solution of simultaneous linear equations using Gaussian elimination and triangular factorization. Orthogonal projections, pseudo inverse and singular value decomposition, least squares approximation. Determinants, eigenvalues and eigenvectors, diagonalization. Prereq: MA 114.
	Proposed Course Description for Bulletin:	*Algebra of matrices, elementary theory of vector spaces and inner product spaces, the solution of simultaneous linear equations using Gaussian elimination and triangular factorization. Orthogonal projections, pseudo inverse and singular value decomposition, least squares approximation. Determinants, eigenvalues and eigenvectors, diagonalization. Prereq: MA 114.*

j. **Current Prerequisites, if any:** MA 114

Proposed Prerequisites, if any: ____

k. Current Distance Learning(DL) Status: ☐ N/A ☐ Already approved for DL* ☒ *Please Add*[6] ☐ *Please Drop*

*If already approved for DL, the Distance Learning Form must also be submitted unless the department affirms (by checking this box ☐) that the proposed changes do not affect DL delivery.

l. **Current Supplementary Teaching Component, if any:** ☐ Community-Based Experience ☐ Service Learning ☐ Both

Proposed Supplementary Teaching Component: ☐ *Community-Based Experience* ☐ *Service Learning* ☐ *Both*

3. **Currently, is this course taught off campus?** YES ☐ NO ☒

Proposed to be taught off campus? YES ☐ NO ☐

4. **Are significant changes in content/teaching objectives of the course being proposed?** YES ☐ NO ☒

If YES, explain and offer brief rationale:

____

5. **Course Relationship to Program(s).**

a. **Are there other depts and/or pgms that could be affected by the proposed change?** YES ☐ NO ☒

If YES, identify the depts. and/or pgms: ____

b. **Will modifying this course result in a new requirement[7] for ANY program?** YES ☐ NO ☒

If YES[7], list the program(s) here: ____

6. **Information to be Placed on Syllabus.**

a. ☐ Check box if changed to — If changed to 400G- or 500-level course you must send in a syllabus and *you must include the differentiation* between undergraduate and graduate students by: (i) requiring additional assignments

[6] You must *also* submit the Distance Learning Form in order for the course to be considered for DL delivery.

[7] In order to change a program, a program change form must also be submitted.

	400G or 500.	by the graduate students; and/or (ii) establishing different grading criteria in the course for graduate students. (See *SR 3.1.4.*)

COURSE CHANGE FORM

Signature Routing Log

General Information:

Course Prefix and Number: MA 322DL

Proposal Contact Person Name: Russell Brown Phone: 73951 Email: russell.brown@uky.edu

INSTRUCTIONS:

Identify the groups or individuals reviewing the proposal; note the date of approval; offer a contact person for each entry; and obtain signature of person authorized to report approval.

Internal College Approvals and Course Cross-listing Approvals:

Reviewing Group	Date Approved	Contact Person (name/phone/email)	Signature
Math Faculty	4/15/2010	Zhongwei Shen, Chair / 73470 / zshen2@uky.edu	
A+S Assoc Dean	4/19/2010	Anna Bosch / 7-6681 / bosch@uky.edu	Anna R. K. Bosch
		/ /	
		/ /	
		/ /	

External-to-College Approvals:

Council	Date Approved	Signature	Approval of Revision[8]
Undergraduate Council	5/11/2010		
Graduate Council			
Health Care Colleges Council			
Senate Council Approval		University Senate Approval	

Comments:

[8] Councils use this space to indicate approval of revisions made subsequent to that council's approval, if deemed necessary by the revising council.

To: Course approval committees
From: Russell Brown, DUS math

Subject: Request to offer MA 322 via distance learning
Date: 11 March 2010

Attached, find a course change form for MA 322 to add a distance learning option for this course.

Distance Learning Form – Attachment

MA 322 201

Paul E. Eakin

February 4, 2010

10. Does the syllabus contain all the required components, below?

** The only accommodation issues that have occurred are extra time for exams, since the exams are on-campus these are handled exactly the same as for on-campus students.

* The services are currently not needed for this course

Syllabus for MA 322-005 (201) Fall 2010

MA322-005 (201) Fall 2010

Ma322-005 is an introduction to linear algebra and the theory of matrices. Prerequisites are the mathematical maturity represented by successful completion of two semesters of calculus or the completion of the first and concurrent enrollment in the second.
This section of Ma322 has been developed to serve the needs of students with work or other responsibilities who have difficulties attending class in the traditional on-campus format. Except for the initial session and for examinations, the class will meet "online", using a synchronous conferencing system called Adobe Connect. There will be lectures and discussion just as with the traditional "in-class" format.

Equipment Needed

To participate in the class you will need a reasonably modern computer (PC, Mac, or Linux) with Adobe Flash Player 9.0 or later, Internet Explorer 6.0 or newer, or Firefox 3.0 or newer) speakers and a microphone (A headset with microphone is strongly recommended) and a broadband connection (dialup will not work). You do not need a video camera to participate in this course.

The details of the communications system and a link on which to check your computer for readiness are at http://www.uky.edu/TASC/AV/connectproresource.php

Web Homework

The class will also use the UK Math Department's WHS web-homework system. Accounts will be be created in this system within 24 hours of official regiatration in the course and can then be activated beginning the evening of August 25, 2010. If you are not familiar with the WHS system then some basic startup instructions are available at https://www.mathclass.org/WebPages/Pages/272/InitialLoginInfo_UK.pdf

Technology

A general scientific calculator will suffice for all homework and examinations. Students are welcome to use more sophistricted calculators such as the TI-89 and computer applications such as Matlab, Maple, Mathematica, Worfram Alpha, etc. to do the homework and even for intuition and answer checking on exams. However computers will not be permitted on the examinations . Examination answers involving multi-step calcualtions that are simply taken from computer rountines without explanation or justification will receive no credit.

The instructor will often use the Maple problem solving language to illustrate course material and to efficiently do calculations. Students may wish to learn about Maple as part of their course participation. Maple is installed in all university computing laboratories where it can be freely used. The student version can be purchased from Maplesoft at https://webstore.maplesoft.com/catalog.aspx
(download) for $99 and shipped CD for $129. They offer many "student resources" that are probably not worth the expense given free resources such as Professor Eberhart's free Maple handbooks and worksheets at http://www.ms.uky.edu/~carl/
Use of Maple is not a required part of the course, the homework problems do not require Maple (a calculator will suffice), and nothing about Maple will appear on the examinations.

An orientation to the technology will be provided at the " in-person" meeting on the first day of class in PLACE at TIME/DATE. For students who are taking the course at a distance making it unreasonable to attend the on-campus orientation a web-conference orientation can be scheduled. Contact the instructor at paul@ms.uky.edu for information on the online orientation.
Assistance with the Technology:

There is an ongoing series of student orientations to the Adobe Connect system. See http://www.uky.edu/TASC/AV/connectproresource.php for a schedule and numerous online resources. There is a link there verify that you have an appropriate, functioning system.
For assistance with any of the UK WHS technology, contact the instructor by email or telephone or click "Help" on any page of http://www.mathclass.org and submit a help message describing the problem. IF you are logged in to your account then the system will, in principle, have all of the informaiton it needs to contact you. Even in that case however, at least until the second full week of class, please include contact information in the message.

Here is summary of instructor contact information as well as times and locations of class meetings and the like, as of the first day of class. **These are subject to change through the first two weeks of class.**

MA 322-xxx	
Instructor	Paul Eakin
Office	777 P.O.T.
Phone	257-6798 or 323-2849
E-Mail	paul@ms.uky.edu
Office Hours	TBA and by appt. for on-campus After class Monday for off-campus
Mathskeller Hours	TBA (university and professional duties may sometimes interfere with this schedule)
Class	TBA (Initial Meeting and exams) Subsequent meetings via synchronous distance learning.

THE EXAMINATIONS ARE ALL " TRADITIONAL" , PROCTORED, CONSTRUCTED RESPONSE (i.e." show your work**") EXAMS. IF STUDENTS CAN REASONABLY TRAVEL TO THE UK CAMPUS THEN THEY ARE EXPECTED TO TAKE THEM ON THE UK CAMPUS AS SCHEDULED BELOW.**

The exams will be in the evenings, for two hours to provide sufficient time. The **tentative exam schedule** is as follows.

Exam	Date	Time	Location
Exam 1	TBA	TBA	TBA

Exam 2	TBA	TBA	TBA
Final Exam	TBA	TBA	TBA

Any changes in the schedule will be announced no less than two weeks in advance of the affected exam.

Exam scheduling conflicts:

IF A STUDENT IS TAKING THE COURSE AT A DISTANCE THAT MAKES IT UNREASONABLE TO COME TO CAMPUS FOR THE EXAMS THEN INDIVIDUAL ARRANGEMENTS WILL BE MADE FOR PROCTORING THE STUDENT'S EXAMS.

If you need to make individual arrangements for an examination then there will be a form available on the WHS system for this purpose. The form will also provide for alternate starting times for the exam and for extended time for students qualified for accommodation arrangements.

Generalities: The formal course prerequisites are two semesters of calculus. The second may be taken concurrently.

Credit: This course carries three (3) semester hours credit.
Class Meetings: Except for the initial orientation and examinations the course will meet electronically using a web-based conferencing. Students will receive an email prior to each class meeting with a link to the class. The system will record all class sessions and students can review these at any time. These, however, are not a substitute for class attendance.

Attendance at all class sessions is required. Attendance will be taken and is a factor in the course grade.

Textbook: The textbook is *Linear Algebra and Its Applications (Third edition), Pearson*, by David Lay.
The text is an important course resource but the homework problems are in the homework system and are not assigned from the text. We are using edition 3 because it is the one in print. The arrangement of the problems tends to be the major differences among editions of math texts so **if you have access to an inexpensive copy of an earlier edition then it and the course notes and discussion should serve well for the course. Used copies of the second edition were recently available on Amazon.com for $20 or less.**

Homework: This course uses a web based homework system called WHS. Students use the system to obtain homework assignments as well submit them for immediate grading. The system is also used in communicating with their instructors and for tracking their progress in the class. The homework (additional) assignments corresponding to each of the three exams are marked by letter codes A,B,C respectively.
Each student has a personal version of each assignment which must be completed before the assignment deadline. If you submit an incorrect answer, you are allowed to submit again (as many times as needed) until you have the correct answer or the assignment deadline has passed. There is no penalty for submitting an incorrect answer. Students **are permitted and, in fact, encouraged to work together on the homework problems.**
Homework credit: Submissions of versions other than the student's personal version as well as submissions after the deadline (midnight of the due date) receive no credit. The homework counts for 60 of the 400 possible course points. If N is the total number of homework problems assigned in the course and C is the number for which credit is earned then

Homework points = `[ 60*C/N ]` Here "[ ]" means the nearest integer. [59.49] = 59, [59.51] = 60. The convention is that .5 is "nearer" to 1 than 0 so [59.5] = 60.

Examinations: As noted in the table above, there will be two mid-term examinations and one final exam. The examinations will be scheduled as shown in the table above . Each of the examinations will be focused primarily on the material from the lectures and homework from the corresponding exam period. However, students are responsible for all material covered up to that exam, including material from previous exam periods. The final will be comprehensive.
Exams are **hand written** and will be **hand-graded** by the instructor whose primary concern will be an evaluation of the understanding of the material communicated by the student's work. Students are both permitted and expected to use calculators on the examinations for routine arithmetic and built-in function evaluation. Sophisticated features may be used for such things as gaining intuition about a problem or cross-checking answers. However, "answers" simply taken as output from calculator routines, without explanation or justification, will generally not receive any credit.

The two mid-terms and the final count 100 points each.

Attendance and Participation: attendance credit for the session.
There are **40 attendance/participation points**. Each student is allowed two unexcused absences from lectures. Each unexcused absence beyond those two deducts three attendance points.
Attendance will be taken at each lecture. Expect to be asked for participation. Falure to participate when called upon will result in loss of attendance credit for the session.

Course Topics and Dates: The **Course Calendar** listing the material to be covered, relevant homework assignments, and homework due dates is available on Dr. Sathaye's page at http://www.me.uky.edu/~sohum
Note that this is subject to adjustment, depending on the progress of the course. The dates and times of the exams, however are very unlikely to change.

Final Exam: The final examination will be over all the material of the course.

Grades: There are a total of **400 points** to be earned in the course. The grading scale is:

A At least 90% or at least 360 points

B At least 80% or at least 320 points

C At least 70% or at least 280 points

D At least 60% or at least 240 points

E Below 60% (below 240 points)

These points can be earned through the following activities:

Exams and Final	300 points	75 % of course grade
Online homework	60 points	15% of course grade
Attendance and participation	40 points	10% of course grade
Total	400 points	100% of course grade

Note Well: The final grade is a course grade - **not a test grade**. The homework and attendance/participation grades together are the equivalent of an exam and they will be counted.

Cheating Collaboration on, or receiving assistance on the online homework is specifically permitted and is **not** considered cheating.
With this explicit exception, any representation of the work of others as your own in order to gain academic credit or advantage **is** cheating.

Individuals caught cheating will immediately be assigned failing grades on the assignment and will be reported to the proper university administrators. Refer to **http://www.uky.edu/Ombud/acadoffenses/** for a brief synopsis of the UK policy on academic offenses from the office of the Ombud and to page 167 of **UK Senate RULES** for the full detals.

modified: Tuesday, March 15, 2011

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