THE UNIVERSITY OF ALABAMA® | Culverhouse College of Commerce Office of the Dean

FACULTY FORUM MINUTES

April 27, 2018

Alston 30

2:00 pm

Dr. Schnee called the meeting to order at 2:00 pm in Alston 30.

1. **New Course Proposal for FI 427** -Dr. Schnee began with the asking if there were questions. With there being none, Dr. Schnee asked for a motion to approve the proposal. A motion was made by Dr. Gorman Houston and seconded by Dr. Chapman Greer, the faculty were asked to mark their ballots. **(Vote: Approve-99 Disapprove-3 Abstain-4)**
2. **New Course Proposal for FI 428** -Dr. Schnee began with the asking if there were questions. With there being none, Dr. Schnee asked for a motion to approve the proposal. A motion was made by Dr. Sherwood Clements and seconded by Dr. Jef Naidoo, the faculty were asked to mark their ballots. **(Vote: Approve-99 Disapprove-3 Abstain-4)**
3. **New Course Proposal for MIS 460**-Dr. Schnee began with the asking if there were questions. With there being none, Dr. Schnee asked for a motion to approve the proposal. A motion was made by Dr. Lou Marino and seconded by Dr. Sherwood Clements, the faculty were asked to mark their ballots. **(Vote: Approve-101 Disapprove-3 Abstain-2)**
4. **New Course Proposal for MIS 462**-Dr. Schnee began with the asking if there were questions. With there being none, Dr. Schnee asked for a motion to approve the proposal. A motion was made by Dr. Chapman Greer and seconded by Dr. Joel Strayer, the faculty were asked to mark their ballots. **(Vote: Approve-101 Disapprove-4 Abstain-1)**
5. **New Course Proposal for MIS 464/564**-Dr. Schnee began with the asking if there were questions. With there being none, Dr. Schnee asked for a motion to approve the proposal. A motion was made by Dr. Gorman Houston and seconded by Dr. Sherwood Clements, the faculty were asked to mark their ballots. **(Vote: Approve-101 Disapprove-4 Abstain-1)**
6. **New Course Proposal for MIS 466/566**-Dr. Schnee began with the asking if there were questions. With there being none, Dr. Schnee asked for a motion to approve the proposal. A motion was made by Dr. Jef Naidoo and seconded by Dr. Sherwood Clements, the faculty were asked to mark their ballots. **(Vote: Approve-101 Disapprove-4 Abstain-1)**
7. **New Course Proposal for ST 440/540** - Dr. Schnee began with the asking if there were questions. With there being none, Dr. Schnee asked for a motion to approve the proposal. A motion was made by Dr. John Mittenthal and seconded by Dr. Sherwood Clements, the faculty were asked to mark their ballots. **(Vote: Approve- 104 Disapprove-2 Abstain-0)**
8. **New Course Proposal for ST 445/545** - Dr. Schnee began with the asking if there were questions. With there being none, Dr. Schnee asked for a motion to approve the proposal. A motion was made by Dr. Marcus Perry and seconded by Dr. Sherwood Clements, the faculty were asked to mark their ballots. **(Vote: Approve- 104 Disapprove-2 Abstain-0)**

9. **New Course Proposals (MIS 610, 611, 612, 613)** -Dr. Schnee began with the asking if there were questions. With there being none, Dr. Schnee asked for a motion to approve the proposal. A motion was made by Dr. John Mittenthal and seconded by Dr. Burcu Keskin, the faculty were asked to mark their ballots. **(Vote: Approve-95 Disapprove-11 Abstain-0)**
10. **New MIS PhD Program Proposal** - Dr. Schnee began with the asking if there were questions. With there being none, Dr. Schnee asked for a motion to approve the proposal. A motion was made by Dr. John Mittenthal and seconded by Dr. Burcu Keskin, the faculty were asked to mark their ballots. **(Vote: Approve- 95 Disapprove-10 Abstain-1)**
11. **Professional Sales Concentration in the Master of Science in Marketing**-Dr. Schnee began with the asking if there were questions. There was a question of if there was a difference between this proposal and the current way the courses are being taught. Prof. Susan Fant answered that students currently take the sales courses as electives toward their MS in Marketing; the department is seeking approval to formally consider the combination of courses as a concentration. Dr. Schnee asked for a motion to approve the proposal. A motion was made by Dr. Burcu Keskin and seconded by Prof. Susan Fant, the faculty were asked to mark their ballots. **(Vote: Approve- 102 Disapprove-1 Abstain-3)**
12. **New Masters Proposal – Masters of Science in MIS** - Dr. Schnee began with the asking if there were questions. With there being none, Dr. Schnee asked for a motion to approve the proposal. A motion was made by Dr. Chapman Greer and seconded by Dr. Sherwood Clements, the faculty were asked to mark their ballots. **(Vote: Approve- 100 Disapprove-5 Abstain-1)**
13. **Absence from Duty Policy –** Dr. Schnee began with the asking if there were questions. This is an updated policy from the one that has been in place since 1990. The updates included changes to the language to bring the policy more in line with that of UA Faculty Handbook. With there being none, Dr. Schnee asked for a motion to approve the proposal. A motion was made by Prof. Meyer and seconded by Dr. Sarah Miesse, the faculty were asked to mark their ballots. **(Vote: Approve-80 Disapprove-14 Abstain-12)**

The meeting was adjourned at 2:30 pm.

THE UNIVERSITY OF ALABAMA | Culverhouse
College of Commerce
Economics, Finance, and Legal Studies

November 2, 2017

MEMORANDUM

TO: Dr. Edward Schnee

FROM: Dr. Laura Razzolini
Department Head

The EFLS Department proposes the following two new courses for consideration at the next FEB meeting:

FI 427 – Financial Mathematics for Actuaries – Exam P
FI 428 – Financial Mathematics for Actuaries – Exam FM

The courses cover the basic tools to prepare the students for the exams offered by the US Actuarial Association, Specifically the "Exam FM: Financial Mathematics" offered by the Society of Actuaries and the "Exam 2 – Financial Mathematics" offered by the Casualty Actuarial Society. For the past six years, the EFLS Department has offered these courses under the "FI 497: Special topics" label. We propose this permanent course designation to facilitate the accreditation process by the Society of Actuaries (SOA) and by the Casualty Actuarial Society. As a result of this change, the Department will be offering two fewer sections of FI 497, so no additional resources will be utilized.

200 Alston Hall | Box 870224 | 361 Stadium Drive | Tuscaloosa, AL 35487-0224 | 205-348-7842 | Fax 205-348-0590

PROPOSAL FOR FI 427

PROPOSAL TO OFFER A NEW COURSE
Culverhouse College of Commerce
The University of Alabama

Department: *Economics, Finance and Legal Studies* Date: *11/02/2017*

Course Number: *FI 427*

Course Title: *Probability for Actuaries*

Effective Date: *01/01/2018*

PART ONE

(To be completed by the individual proposing the course.)

I. GENERAL INFORMATION

a. Description (25 words or less): *The purpose is to assist students in preparation probability exams by actuarial associations. Concepts are reviewed with an emphasis on working problems.*

b. Corequisite(s): *ST 454 or MATH 451*
Other:

c. Course Level (circle one):

Lower Division Undergraduate

(Upper Division Undergraduate)

Masters

Doctoral

d. Schedule Type (circle one):

(LEC) – Lecture: uses traditional format.

SEM – Seminar: includes student or guest speakers.

IND – Independent Study: involves self-paced study. (excluded from SOI)

FLD – Field Experience: involves work/study outside of a classroom setting.

LAB – Laboratory: held in a laboratory setting.

RCT – Recitation: uses break out discussion groups.

e. Credit Hours: 3

II. ACADEMIC INFORMATION

a. Course Objectives:

The key objective is to prepare student for the exams offered by US actuarial associations, specifically "Exam P: Probability" offered by the Society of Actuaries and "Exam 1-Probabilty" offered by the Casualty Actuarial Society.

At the conclusion of this course, the student should be able to demonstrate that he/ she understands the methods for:

1. *General Probability.*
2. *Random Variables with univariate probability distributions (including binomial, negative binomial, geometric, hypergeometric, Poisson, uniform, exponential, gamma, normal, and mixed)*
3. *Random Variables with multivariate probability distributions (including the bivariate normal)*

b. What course or courses, if any, will this course replace? Implementation of this course, if it does not replace an existing course, may cause enrollment reductions in other courses. Please list all courses in which such enrollment declines may be expected.
This course will replace a 1-credit course FI 497 which is a special topic courses called "Actuarial Exam Prep P." This course has been offered every fall semester for the past five years. It was taught by William Windham from 2012 to 2016 and is currently taught by George Zanjani in Fall 2017.

Semester	Enrolled Students
Fall 2012	3
Fall 2013	4
Fall 2014	11
Fall 2015	9
Fall 2016	10
Fall 2017	12

We anticipate additional growth as the Actuarial Science concentration and minor are restructured and revamped.

c. What is the justification for proposing the course at this time?
We propose a permanent course designation to facilitate the accreditation process by the Society of Actuaries (SOA) and the Casualty Actuarial Society. A permanent course designation will make students' advising easier, as no longer a "special topics" course will be required (every semester several "special topics" may be offered at the same time, with only a slightly different name, but with the same digit number). In addition, we propose to increase the number of credit hours from one to three. While courses in mathematical statistics do, in principle, cover a comprehensive set of tools and concepts that serve as background for the SOA examination, they do not emphasize the material relevant for the examination nor the particular insurance-based applications on which the examination is based. For this reason, most actuarial science programs use a three credit format for the class, and we believe a similar approach in our program would improve exam performance.

d. Name the current faculty who are qualified to teach this course. What specific qualifications and capabilities must an individual have in order to teach this course?
Qualified faculty members include Daniel Bauer and George Zanjani.

e. This course is designed for the following programs:

Finance major, Actuarial Science specialization.

f. This course will be required for the following programs (majors, minors, or specializations):
Actuarial Science Specialization

g. How will this course affect assessment of student learning in the College? Does it address established student learning goals? Does it impact current measurement plans for those goals? Attach an updated curriculum map for the degree program in which the course will be offered.
This course supports the curriculum goals stated in the curriculum map. At the present time, it does not impact on the current measurement plans for those goals, but the College assessment team is aware of the course and is considering how measurement plans could be modified to incorporate it.

h. Attach an outline of the course of at least one page in length and name any textbooks or principal readings that will be used. (This request is not intended to bind future instructors to a detailed program, but only to establish the general scope, nature and level of the course.)
See accompanying syllabus

PART TWO

(To be completed by the department head, alone or in consultation with the proposer.)

I. BUDGETARY INFORMATION

a. Anticipated frequency of offering:

1 section(s) each fall semester — 0 section(s) each spring semester

0 section(s) during summer school — 0 according to demand

b. Estimated total enrollment:

First Year: 15

Second Year: 20

Third Year 25

c. Estimated capacity per section:

Lecture: 35

Other: N/A

d. How does this course impact the mission of the College and department?

This course contributes to the curriculum objective of the College and the EFLS department strategy plan that delivers innovative, high-quality learning experiences that equip our students for market-driven opportunities. The abilities and skills that students acquire in this course immediately enhance their capabilities and competition abilities for a career as an actuary.

e. What resources will be needed to teach this course and where will they come from?

Instructors are already in place.

f. Is there agreement within the department that the course is needed and that resources will be available to teach this course?

Yes.

g. Is there any indication that this course duplicates course work offered elsewhere in the College or University?

No.

II. EVALUATION

a. Describe the system of evaluation that will be used to determine whether this course should be continued in the departmental program. (It would be helpful to relate this system of evaluation to the kinds of information, requested in PART ONE, Section II-Academic Information and PART TWO, Section I-Budgetary Information).

The course will be reviewed annually and evaluated against the College's plans for all undergraduate study offerings. Evaluation criteria will include enrollment and job placements after graduation.

Proposed by: Daniel Bauer and George Zanjani November 1, 2017

Approved by: _____ 11/2/17
Department Head/Director Date

_____ _____
Dean Date

Conditions of approval, if any:

_____

_____

Upon final approval, a course inventory form must be completed and forwarded to the Office for Academic Affairs.

Probability for Actuaries

Fl 427 3 Credit Hours

Lecture

George Zanjani

Contact Information

UA Campus Directory:

- George Zanjani (https://www.ua.edu/directory/?i=ghzanjani#listing)

Prerequisites

UA Course Catalog Corequisites:

ST 454 or MATH 451

Familiarity with calculus will be assumed.

Course Description

Course Description and Credit Hours
Topics may vary

The purpose of this course is to assist the student in preparation for Exam P, a three-hour exam consisting of 30 multiple choice questions, administered by the Society of Actuaries. We will introduce the basic concepts covered under Exam P and emphasize the working of problems.

Required Texts

Required Texts from UA Supply Store:No required textbooks found.

There is no required textbook for the course. The SOA does not have a single required textbook for the exam and recommends students to consult multiple references in preparing. Specifically, the SOA identifies

A First Course in Probability (Ninth Edition), 2012, by Ross, SM., Pearson/Prentice Hall, ISBN: 9780321794772, Chapters 1-8

Mathematical Statistics with Applications (Seventh Edition), 2008, by Wackerly, D, Mendenhall Ill, W. , Scheaffer, R., Thomson Brooks/Cole ISBN: 978- 0495110811, Chapters 1-7.
Probability for Risk Management, (Second Edition), 2006, by Hassett, M. and Stewart, D, ACTEX, ISBN: 978-156698-2, Chapters 1—11.
Probability and Statistical Inference (Ninth Edition), 2014, by Hogg, R. V. , Tanis, EA., and D. Zimmerman, Prentice Hall, ISBN: 978-0321923271, Chapters 1—5.

Probability and Statistics with Applications: A Problem Solving Text, (Second Edition) 2015, by Asimow, L. and Maxwell, M, ACTEX, ISBN: 978-1-62542-472-3, Chapters 1-8 (excluding section 8.5)

as suggested references.

While no text will be required for the course, I will generally rely on the approach and notation of Hassett and Stewart (2006) where possible.
Hassett and Stewart's text is also helpful in that the approach and problems are generally focused on insurance and risk management. The SOA also recommends the 16-page document

http://www.soa.org/files/pdf/P-21-05.pdf
as additional background on the application of probability and statistics to risk management and insurance.

Course Objectives

The course will cover the basic elements of probability and statistics in risk management applications, covering specific topics identified by the Society of Actuaries for Exam P. We will work problems in these topic areas, which are enumerated more fully under student learning outcomes.

Student Learning Outcomes

1. General Probability

• Set functions including set notation and basic elements of probability

- Mutually exclusive events
- Addition and multiplication rules
- Independence of events
- Combinatorial probability
- Conditional probability
- Bayes Theorem / Law of total probability

2. Random Variables with univariate probability distributions (including binomial, negative binomial, geometric, hypergeometric, Poisson, uniform, exponential, gamma, normal, and mixed)
- Probability functions and probability density functions
- Cumulative distribution functions
- Sums of Independent Random Variables (Poisson and normal)
- Mode, median, percentiles, and moments
- Variance and measures of dispersion (including coefficient of variation)
- Moment generating functions
- Transformations

3. Random Variables with multivariate probability distributions (including the bivariate normal)
- Joint probability functions and joint probability density functions
- Joint cumulative distribution functions
- Central Limit Theorem
- Conditional and marginal probability distributions
- Moments for joint, conditional, and marginal probability distributions
- Joint moment generating functions
- Variance and measures of dispersion for conditional and marginal probability distributions
- Covariance and correlation coefficients
- Transformations and order statistics

- Probabilities and moments for linear combinations of independent random variables

Other Course Materials

Supplemental materials, such as slides and notes, will be distributed as needed.

Outline of Topics

Topics will generally follow the course of chapters in Hassett and Stewart (HS), with deviations as necessary.

Week 1	Sets, Spaces, Events HS Ch. 2
Week 2	Counting, Permutations, Combinations HS Ch. 2-3
Week 3	Calculating Probability HS Ch. 2-3
Week 4	Conditional Probability and Bayes Theorem HS Ch. 3
Week 5	Discrete Random Variables HS Ch. 4
Week 6	Discrete Random Variables HS Ch. 4
Week 7	Discrete Distributions HS Ch. 5
Week 8	Discrete Distributions HS Ch. 5
Week 9	Applications of Discrete Random Variables HS Ch. 6
Week 10	Moments and Moment Generating Functions HS Ch. 6
Week 11	Continuous Random Variables HS Ch. 7
Week 12	Continuous Distributions HS Ch. 8
Week 13	Applications of Continuous Random Variables HS Ch. 9
Week 14	Multivariate Distributions HS Ch. 10
Week 15	Applications of Multivariate Distributions HS Ch. 11

Exams and Assignments

Success on the SOA exams is achieved through study and practice. Regular problem sets will be distributed that will account for 40% of the grade. The midterm will account for 20% of the grade. A final exam will account for 40% of the grade.

Grading Policy

The guaranteed range of grades is:

90% or greater = A;

80-89% = B;

70-79% = C;

60-69% = D;

59% or lower = F.

Actual grade ranges can be flexible downward (e.g., the A-range might start at 88% instead of 90%) with the flexibility depending on the letter grade.

Policy on Missed Exams and Coursework

Students are expected to hand in homework and take exams on time. Late homework will be penalized. Special circumstances must be addressed on a case-by-case basis with me.

Attendance Policy

Attendance is required. Students are allowed three unexcused absences.

Notification of Changes

The instructor will make every effort to follow the guidelines of this syllabus as listed; however, the instructor reserves the right to amend this document as the need arises. In such instances, the instructor will notify students in class and/or via email and will endeavor to provide reasonable time for students to adjust to any changes.

Statement on Academic Misconduct

Students are expected to be familiar with and adhere to the official Code of Academic Conduct

(http://catalog.ua.edu/undergraduate/about/academic-regulations/student-expectations/code-academic-conduct/)

provided in the Online Catalog.

Statement On Disability Accommodations

Contact the Office Of Disability Services (ODS)

(http://catalog.ua.edu/undergraduate/about/supportprograms/disability-services/)

as detailed in the Online Catalog.

Severe Weather Protocol

Please see the latest Severe Weather Guidelines

(http://catalog.ua.edu/undergraduate/about/supportprograms/severe-weather-guidelines/)

in the Online Catalog.

Pregnant Student Accommodations

Title IX protects against discrimination related to pregnancy or parental status. If you are pregnant and will need accommodations for this class, please review the University's FAQs on the UAct website
(https://www.ua.edu/campuslife/uact/information/pregnancy)

Religious Observances

Under the Guidelines for Religious Holiday Observances, students should notify the instructor in writing or via email during the first two weeks of the semester of their intention to be absent from class for religious observance. The instructor will work to provide reasonable opportunity to complete academic responsibilities as long as that does not interfere with the academic integrity of the course. See full guidelines at Religious Holiday Observances Guidelines

(http://provost.ua.edu/uploads/3/9/7/6/39760652/oaa_guidelines for religious_holiday_observance.pdf)

UAct Statement

The UAct website
(https://www.ua.edu/campuslife/uact/)
provides an overview of The University's expectations regarding respect and civility.

Proposal for FI 428

PROPOSAL TO OFFER A NEW COURSE
Culverhouse College of Commerce
The University of Alabama

Department: *Economics, Finance and Legal Studies* Date: *11/02/2017*

Course Number: *FI 428*

Course Title: *Financial Mathematics for Actuaries*

Effective Date: *01/01/2018*

PART ONE

(To be completed by the individual proposing the course.)

I. GENERAL INFORMATION

a. Description (25 words or less): *The purpose is to assist students in preparation for financial mathematics exams by actuarial associations. Concepts are reviewed with an emphasis on working problems.*

b. Prerequisite(s): *Math 126-Calculus II*

Corequisite(s): *None*

Other:

c. Course Level (circle one):

Lower Division Undergraduate

(Upper Division Undergraduate)

Masters

Doctoral

d. Schedule Type (circle one):

(LEC) – Lecture: uses traditional format.

SEM – Seminar: includes student or guest speakers.

IND – Independent Study: involves self-paced study. (excluded from SOI)

FLD – Field Experience: involves work/study outside of a classroom setting.

LAB – Laboratory: held in a laboratory setting.

RCT – Recitation: uses break out discussion groups.

e. Credit Hours: 3

II. ACADEMIC INFORMATION

a. Course Objectives:

The key objective is to prepare student for the corresponding exams offered by US actuarial associations, specifically "Exam FM: Financial Mathematics" offered by the Society of Actuaries and "Exam 2-Financial Mathematics" offered by the Casualty Actuarial Society.

At the conclusion of this course, the student should be able to demonstrate that he/she understands the methods for:

1. Calculating the equivalent annual effective rate of interest, given a nominal annual rate and a frequency of interest conversion, discrete or continuous.

2. Calculating the appropriate equivalent single value (present value, net present value, future value or combination), given a set of cash flows (level or varying), an appropriate term structure of interest rates, and an appropriate set of inflation rates.

3. Calculating the yield rate, given a set of investment cash flows.

4. Calculating the principal and interest portions of a loan payment, given the loan amount, the set of loan payments (level or varying), and a set of interest rates (level or varying).

5. Calculating the loan amount, given a set of loan payments (level or varying) and a set of interest rates (level or varying).

6. Calculating appropriate values for a financial transaction, given a cash-flow model that reflects the timing of payments of each of the associated cash flows.

7. Calculating appropriate investment project appraisal value using a discounted cash flow mode.

8. Understanding yield curves, spot rates, and forward rates and perform calculations using their relationships.

b. What course or courses, if any, will this course replace? Implementation of this course, if it does not replace an existing course, may cause enrollment reductions in other courses. Please list all courses in which such enrollment declines may be expected.

This course will replace a 3-credit course FI 497 which is a special topic courses called "Actuarial Exam Prep FM." This course has been offered every spring semester for the past six years. It was taught by William Windham from 2012 to 2017 and it will be taught by Daniel Bauer in Spring 2018.

Semester	Enrolled Students
Spring 2012	1
Spring 2013	3
Spring 2014	9
Spring 2015	9
Spring 2016	9
Spring 2017	11

We anticipate additional growth as the Actuarial Science concentration and minor are restructured and revamped.

c. What is the justification for proposing the course at this time?

We propose a permanent course designation to facilitate the accreditation process by the Society of Actuaries (SOA) and the Casualty Actuarial Society. Furthermore, a permanent course designation will make students' advising easier, as no longer a "special topics" course will be required (every semester several "special topics" may be offered at the same time, with only a slightly different name, but with the same digit number).

d. Name the current faculty who are qualified to teach this course. What specific qualifications and capabilities must an individual have in order to teach this course?
Qualified faculty members include Daniel Bauer and George Zanjani.

e. This course is designed for the following programs:

Finance major, Actuarial Science specialization

f. This course will be required for the following programs (majors, minors, or specializations):
Actuarial Science Specialization

g. How will this course affect assessment of student learning in the College? Does it address established student learning goals? Does it impact current measurement plans for those goals? Attach an updated curriculum map for the degree program in which the course will be offered.
This course supports the curriculum goals stated in the curriculum map. At the present time, it does not impact on the current measurement plans for those goals, but the College assessment team is aware of the course and is considering how measurement plans could be modified to incorporate it.

h. Attach an outline of the course of at least one page in length and name any textbooks or principal readings that will be used. (This request is not intended to bind future instructors to a detailed program, but only to establish the general scope, nature and level of the course.)
See accompanying syllabus

PART TWO

(To be completed by the department head, alone or in consultation with the proposer.)

I. BUDGETARY INFORMATION

a. Anticipated frequency of offering:

1 section(s) each spring semester	0 section(s) each spring semester
0 section(s) during summer school	0 according to demand

b. Estimated total enrollment:

First Year:	15
Second Year:	20
Third Year	25

c. Estimated capacity per section:

Lecture:	35
Other:	N/A

d. How does this course impact the mission of the College and department?

This course contributes to the curriculum objective of the College and the EFLS department strategy plan that delivers innovative, high-quality learning experiences that equip our students for market-driven opportunities. The abilities and skills that students acquire in this course immediately enhance their capabilities and competition abilities for a career as an actuary.

e. What resources will be needed to teach this course and where will they come from?

Instructors are already in place.

f. Is there agreement within the department that the course is needed and that resources will be available to teach this course?

Yes.

g. Is there any indication that this course duplicates course work offered elsewhere in the College or University?

No.

II. EVALUATION

a. Describe the system of evaluation that will be used to determine whether this course should be continued in the departmental program. (It would be helpful to relate this system of evaluation to the kinds of information, requested in PART ONE, Section II-Academic Information and PART TWO, Section I-Budgetary Information).

The course will be reviewed annually and evaluated against the College's plans for all undergraduate study offerings. Evaluation criteria will include enrollment and job placements after graduation.

Proposed by: Daniel Bauer and George Zanjani November 1, 2017

Approved by: _____ 11/2/17
Department Head/Director Date

_____ _____
Dean Date

Conditions of approval, if any:

_____

_____

Upon final approval, a course inventory form must be completed and forwarded to the Office for Academic Affairs.

Financial Mathematics for Actuaries

FI 428 3 Credit Hours

Lecture

Daniel Bauer

Contact Information

UA Campus Directory:

- Daniel Bauer (https://www.ua.edu/directory/?i=dbauer#listing)

OFFICE: Alston Hall 232 (361 Stadium Drive)
OFFICE HOURS: TBA & By Appointment
PHONE/EMAIL: 2015-348-8486/dbauer@cba.ua.edu

Prerequisites

UA Course Catalog Prerequisites:
Math 126 – Calculus II

Please refer to the course sequence for the Actuarial Science Specialization. Familiarity with differential and integral calculus is expected.

Course Description

Course Description and Credit Hours
Topics may vary

The topics include fundamental concepts of financial mathematics, including measurement of interest, accumulation and discount, forces of interest and discount, and calculating present and accumulated values for various streams of cash flows (annuities, perpetuities, amortization and

sinking funds, yield rates, bonds and other securities). A key objective is to prepare students for the corresponding exams offered by actuarial associations.

Required Texts

Required Texts from UA Supply Store:

- KELLISON / THEORY OF INTEREST **(Recommended)**

In addition, we will post homework, examples, and other material on iCollege. Nevertheless, it is strongly advised that you take notes during lecture as there may be ideas presented in the class which are **not** included in the notes.

Course Objectives

The key objective is to prepare student for the corresponding exams offered by US actuarial assocaitions, specifically "Exam FM: Financial Mathematics" offered by the Society of Actuaries and "Exam 2-Financial Mathematics" offered by the Casualty Actuarial Society.

Student Learning Outcomes

At the conclusion of this course, the student should be able to demonstrate that he/she understands the methods for:

1. Calculating the equivalent annual effective rate of interest, given a nominal annual rate and a frequency of interest conversion, discrete or continuous.

2. Calculating the appropriate equivalent single value (present value, net present value, future value or combination), given a set of cash flows (level or varying), an appropriate term structure of interest rates, and an appropriate set of inflation rates.

3. Calculating the yield rate, given a set of investment cash flows.

4. Calculating the principal and interest portions of a loan payment, given the loan amount, the set of loan payments (level or varying), and a set of interest rates (level or varying).

5. Calculating the loan amount, given a set of loan payments (level or varying) and a set of interest rates (level or varying).

6. Calculating appropriate values for a financial transaction, given a cash-flow model that reflects the timing of payments of each of the associated cash flows.

7. Calculating appropriate investment project appraisal value using a discounted cash flow mode.

8. Understanding yield curves, spot rates, and forward rates and perform calculations using their relationships.

Other Course Materials

Calculators should be approved ahead of time. Automatic approval will be given to BA-35, TI-30Xa, BAII Plus, TI-30XIIS, BA II Plus Professional Edition, TI-30XIIB, TI-30XS MultiView and TI-30XB MultiView.

Outline of Topics

Weeks	Content
1-5	Chapter 1-4 Kellison
	MIDTERM 1
6-10	Chapter 5-7 Kellison
	MIDTERM 2
11-14	Chapter 10-11 Kellison
	FINAL EXAM

Exams and Assignments

There will be homework assignments to clarify and deepen concepts, quizzes, two in-class midterm examinations, as well as a final exam.

Grading Policy

The homework count for 10% of the grade, quizzes for 20%, the mid-term examinations (combined) for 30%, and the final exam for 40% of the final grade. Make-up examinations are offered only under extraordinary circumstances. Grades will be awarded on a +/- basis, and the

following guaranteed scale applies. Grades may be moved upward based on difficulty, but not downward:

A+	A	A-	B+	B	B-	C+	C	C-	D	F
98	92	90	88	82	80	78	72	70	60	<60

Policy on Missed Exams and Coursework

Students who miss examinations should contact me immediately.

Attendance Policy

The material will be presented in lecture form. Attendance is not formally taken. However, it is strongly suggested that students do not miss class as most students will have difficulties completing the assignments without attending the lectures.

Notification of Changes

The instructor will make every effort to follow the guidelines of this syllabus as listed; however, the instructor reserves the right to amend this document as the need arises. In such instances, the instructor will notify students in class and/or via email and will endeavor to provide reasonable time for students to adjust to any changes.

Statement on Academic Misconduct

Students are expected to be familiar with and adhere to the official Code of Academic Conduct (http://catalog.ua.edu/undergraduate/about/academic-regulations/student-expectations/code-academic-conduct/) provided in the Online Catalog.

Statement On Disability Accommodations

Contact the Office of Disability Services (ODS) (http://catalog.ua.edu/undergraduate/about/support-programs /disability-services/) as detailed in the Online Catalog.

Severe Weather Protocol

Please see the latest Severe Weather Guidelines (http://catalog.ua.edu/undergraduate/about/supportprograms/severe-weather-guidelines/) in the Online Catalog.

Pregnant Student Accommodations

Title IX protects against discrimination related to pregnancy or parental status. If you are pregnant and will need accommodations for this class, please review the University's FAQs on the UAct website (https://www.ua.edu/campuslife/uact/information/pregnancy) .

Religious Observances

Under the Guidelines for Religious Holiday Observances, students should notify the instructor in writing or via email during the first two weeks of the semester of their intention to be absent from class for religious observance. The instructor will work to provide reasonable opportunity to complete academic responsibilities as long as that does not interfere with the academic integrity of the course. See full guidelines at Religious Holiday Observances Guidelines (http://provost.ua.edu/uploads/3/9/7/6/39760652/oaa_guidelines_for_religious_holiday_observance.pdf) .

UAct Statement

The UAct website (https://www.ua.edu/campuslife/uact/) provides an overview of The University's expectations regarding respect and civility.

PROPOSAL TO OFFER A NEW COURSE

COLLEGE OF COMMERCE AND BUSINESS ADMINISTRATION
THE UNIVERSITY OF ALABAMA

Department: ISM Date: 12/11/2017

Course Number: MIS 460 Course Title: Applied Cyber Security

Effective Date: August 1, 2018

PART ONE

(To be completed by the individual proposing the course.)

I. GENERAL INFORMATION

A. Description (25 words or less):

This course examines management issues and practical implications related to securing information systems.

B. 1. Prerequisite(s): None

2. Corequisite(s): None

3. Other: _____

C. Course Level: Upper Division Undergraduate
(Lower Division Undergraduate, Upper Division Undergraduate, Graduate I or Graduate II)

D. Format: 3 Hours of lecture per week

_____ Hours of discussion (recitation per week)

_____ Hours of laboratory (or field work) per week

Other instructional methods and modes: _____

_____

_____

E. Credit Hours: 3

II. ACADEMIC INFORMATION

A. Course Objectives:

Upon the completion of this course, students will be able to:

1. understand the core concepts of networking and TCP/IP.
2. explain orally and in writing key security concepts related to IT security so that a lay person in the IT field could easily understand.
3. use IT Security jargon and acronyms correctly and can translate technical articles into plain English.
4. examine and understand current security related issues by selecting and understanding relevant articles in selected current periodicals.
5. make intelligent, reasonable, thoughtful, and accurate decisions about IT security, vulnerabilities, and legal issues.
6. use a small number of contemporary security software to protect and assess information systems and network infrastructure and obtain a high-level understanding of a larger number of security tools.

B. What course or courses, if any, will this course replace? Implementation of this course, if it does not replace an existing course, may cause enrollment reductions in other courses. Please list all courses in which such enrollment declines may be expected.

This is a new course.

C. What is the justification for proposing the course at this time?

Information security and the application of theories and techniques to security threat mitigation and prevention and increasingly important to organizations.

D. Name the current faculty who are qualified to teach this course. What specific qualifications and capabilities must an individual have in order to teach this course?

Dr. Greg Bott and Dr. Allen Johnston

To teach this course, an individual must have some experience in applied information security techniques and practices.

E. This course is designed for the following curricula (programs):

MIS BS curriculum

F. This course will be required for the following majors and minors:

None

G. Attach an outline of the course of at least one page in length and name any textbooks or principal readings that will be used. (This request is not intended to bind future instructors to a detailed program, but only to establish the general scope, nature and level of the course.)

PART TWO

(To be completed by the department head, alone or in consultation with the proposer.)

I. **BUDGETARY INFORMATION**

A. Anticipated frequency of offering:

__1___ section(s) each fall semester _____ section(s) each spring semester

_____ section(s) during summer school _____ according to demand

B. Estimated total enrollment:

First Year: ____15_____

Second Year: ____20_____

Third Year ____25_____

C. Estimated capacity per section:

Lecture: ____45_____

Discussion _____

Laboratory _____

D. How does this course impact on the mission of the College and department? This course is an elective for the MIS major and addresses cyber security – a focused area of the MIS faculty and research focus of the University.

E. What resources will be needed to teach this course and where will they come from? The department will have sufficient resources once open lines are filled in 2017-2018.

F. Is there agreement within the department that the course is needed and that resources will be available to teach this course? Yes

G. Is there any indication that this course duplicates course work offered elsewhere in the College or University? No

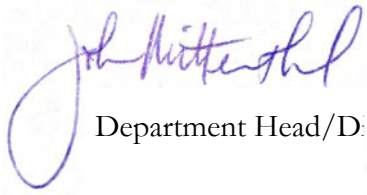
II. **EVALUATION**

Describe the system of evaluation that will be used to determine whether this course should be continued in the departmental program. (It would be helpful to relate this system of evaluation to the kinds of information, requested in PART ONE, Section II-Academic Information and PART TWO, Section I-Budgetary Information).

As we have sufficient faculty resources to offer the course, we will offer it as long as there is sufficient student demand.

Proposed by:  12/11/2017

Name Date

Approved by:  12/11/2017

Department Head/Director Date

12/11/2017

Dean Date

Conditions of approval, if any:

Upon final approval, a course inventory form must be completed and forwarded to the Office for Academic Affairs.

PROPOSAL TO OFFER A NEW COURSE

COLLEGE OF COMMERCE AND BUSINESS ADMINISTRATION
THE UNIVERSITY OF ALABAMA

Department: ISM

Date: 12/11/2017

Course Number: 462

Course Title: Behavioral Information Security

Effective Date: August 1, 2018

PART ONE

(To be completed by the individual proposing the course.)

I. GENERAL INFORMATION

A. Description (25 words or less):

This course focuses on the human element of information security, exploring employee perceptions of threats and effective approaches for motivating compliance with organizational security requirements.

B. 1. Prerequisite(s): None

2. Corequisite(s): None

3. Other: _____

C. Course Level: Upper Division Undergraduate
(Lower Division Undergraduate, Upper Division Undergraduate, Graduate I or Graduate II)

D. Format: 3 Hours of lecture per week

_____ Hours of discussion (recitation per week)

_____ Hours of laboratory (or field work) per week

Other instructional methods and modes: _____

_____

_____

E. Credit Hours: 3

II. ACADEMIC INFORMATION

A. Course Objectives:

Upon the completion of this course, students will be able to:

1. discuss key information security concepts
2. evaluate how people, technology and organizational policies interact to safeguard an organization's information resources
3. describe the danger of humans as insider threats to organizational security
4. apply social and psychological theories and principles to analyze how employees consider risk and the actions required to mitigate or avoid it
5. analyze policies and procedures for achieving high degrees of compliance among employees

B. What course or courses, if any, will this course replace? Implementation of this course, if it does not replace an existing course, may cause enrollment reductions in other courses. Please list all courses in which such enrollment declines may be expected.

This is a new course.

C. What is the justification for proposing the course at this time?

Information security is a managerial problem, and as such, students must understand the implications for managing the human element of an organization's efforts to security its valuable resources. To date, that understanding has not been reflected in the MIS or MBA EC curricula. Further, as the University and Culverhouse College of Commerce continue to grow their commitment and capacity for research and education in cyber security, it is critical that the behavioral element of cyber security is attended to in those efforts.

D. Name the current faculty who are qualified to teach this course. What specific qualifications and capabilities must an individual have in order to teach this course?

Dr. Allen Johnston, Dr. Greg Bott

To teach this course, an individual must have some experience in information security management and have conducted research in behavioral information security.

E. This course is designed for the following curricula (programs):

MIS BS curriculum

F. This course will be required for the following majors and minors:

None

G. Attach an outline of the course of at least one page in length and name any textbooks or principal readings that will be used. (This request is not intended to bind future instructors to a detailed program, but only to establish the general scope, nature and level of the course.)

PART TWO

(To be completed by the department head, alone or in consultation with the proposer.)

I. **BUDGETARY INFORMATION**

A. Anticipated frequency of offering:

_____ section(s) each fall semester __1__ section(s) each spring semester

_____ section(s) during summer school _____ according to demand

B. Estimated total enrollment:

First Year: ____15_____

Second Year: ____20_____

Third Year ____25_____

C. Estimated capacity per section:

Lecture: _____45_____

Discussion _____

Laboratory _____

D. How does this course impact on the mission of the College and department? This course is an elective for the MIS major and addresses cyber security – a focus area of the MIS faculty and a research focus for the University.

E. What resources will be needed to teach this course and where will they come from? The department will have sufficient resources once open lines are filled in 2017-2018.

F. Is there agreement within the department that the course is needed and that resources will be available to teach this course? Yes

G. Is there any indication that this course duplicates course work offered elsewhere in the College or University? No

II. **EVALUATION**

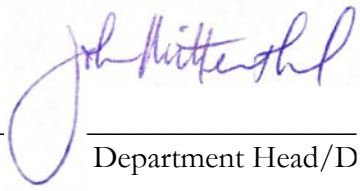
Describe the system of evaluation that will be used to determine whether this course should be continued in the departmental program. (It would be helpful to relate this system of evaluation to the kinds of information, requested in PART ONE, Section II-Academic Information and PART TWO, Section I-Budgetary Information).

As we have sufficient faculty resources to offer the course, we will offer it as long as there is sufficient student demand.

Proposed by:

_____ 12/8/2017_____
Name Date

Approved by:



_____ _____ 12/11/2017_____
Department Head/Director Date

_____
Dean Date

Conditions of approval, if any:

Upon final approval, a course inventory form must be completed and forwarded to the Office for Academic Affairs.

PROPOSAL TO OFFER A NEW COURSE

COLLEGE OF COMMERCE AND BUSINESS ADMINISTRATION
THE UNIVERSITY OF ALABAMA

Department: ISM Date: 12/11/2017

Course Number: MIS 464 Course Title: Organizational Security Management

Effective Date: August 1, 2018

PART ONE

(To be completed by the individual proposing the course.)

I. GENERAL INFORMATION

A. Description (25 words or less):

The course is intended to teach students how to develop and apply an information security management plan to an organization.

B. 1. Prerequisite(s): None

2. Corequisite(s): None

3. Other: _____

C. Course Level: Upper Division Undergraduate
(Lower Division Undergraduate, Upper Division Undergraduate, Graduate I or Graduate II)

D. Format: 3 Hours of lecture per week

_____ Hours of discussion (recitation per week)

_____ Hours of laboratory (or field work) per week

Other instructional methods and modes: _____

_____

_____

E. Credit Hours: 3

II. ACADEMIC INFORMATION

A. Course Objectives:

Upon the completion of this course, students will be able to:

1. understand the strategic importance of effective, interdisciplinary, and multifunctional organizational information security governance and information security management program and its execution.
2. compare various types of organizational information security governance structures, information security management programs, and their critical components.
3. develop a working knowledge of types of policy, how policy is created, how to manage policy.
4. understand the importance of compliance and training in information security risk management.
5. differentiate between stakeholder groups and their respective roles, investment, and interest in an effective organizational information security management program.
6. assess the ethical, social, environmental, and risk considerations for organizational information security governance.
7. evaluate the effectiveness and potential application of multiple information security governance structures and information security management programs for variant organizational scenarios with consideration for strategic, operational, ethical, social, environmental, and risk factors.

B. What course or courses, if any, will this course replace? Implementation of this course, if it does not replace an existing course, may cause enrollment reductions in other courses. Please list all courses in which such enrollment declines may be expected.

This is a new course.

C. What is the justification for proposing the course at this time?

Information security is a managerial problem, and as such, students must understand the implications for managing the organization's efforts to securing its valuable resources. To date, that understanding has not been reflected in the MIS curricula. Further, as the University and Culverhouse College of Commerce continue to grow their commitment and capacity for research and education in cyber security, it is critical that the organizational element of cyber security is attended to in those efforts.

D. Name the current faculty who are qualified to teach this course. What specific qualifications and capabilities must an individual have in order to teach this course?

Dr. Allen Johnston, Dr. Greg Bott, Dr. YuanYuan Chen

To teach this course, an individual must have some experience in information security management and have conducted research in organizational information security.

E. This course is designed for the following curricula (programs):

MIS BS curriculum

F. This course will be required for the following majors and minors:

MIS MS majors

G. Attach an outline of the course of at least one page in length and name any textbooks or principal readings that will be used. (This request is not intended to bind future instructors to a detailed program, but only to establish the general scope, nature and level of the course.)

PART TWO

(To be completed by the department head, alone or in consultation with the proposer.)

I. **BUDGETARY INFORMATION**

A. Anticipated frequency of offering:

__1__ section(s) each fall semester _____ section(s) each spring semester

_____ section(s) during summer school _____ according to demand

B. Estimated total enrollment:

First Year: ___15_____

Second Year: ___20_____

Third Year ___25_____

C. Estimated capacity per section:

Lecture: ____45_____

Discussion _____

Laboratory _____

D. How does this course impact on the mission of the College and department? This course is an elective for the MIS major and addresses informational security. This topic is related to cyber security and is a focus area of the MIS faculty as well as a research focus for the University.

E. What resources will be needed to teach this course and where will they come from? The department will have sufficient resources once open lines are filled in 2017-2018.

F. Is there agreement within the department that the course is needed and that resources will be available to teach this course? Yes

G. Is there any indication that this course duplicates course work offered elsewhere in the College or University? No

II. **EVALUATION**

Describe the system of evaluation that will be used to determine whether this course should be continued in the departmental program. (It would be helpful to relate this system of evaluation to the kinds of information, requested in PART ONE, Section II-Academic Information and PART TWO, Section I-Budgetary Information).

As we have sufficient faculty resources to offer the course, we will offer it as long as there is sufficient student demand.

Proposed by: Yuanyuan Chen 12/08/2017

Name Date

Approved by: 12/11/17

Department Head/ Director Date

Dean Date

Conditions of approval, if any:

Upon final approval, a course inventory form must be completed and forwarded to the Office for Academic Affairs.

PROPOSAL TO OFFER A NEW COURSE

COLLEGE OF COMMERCE AND BUSINESS ADMINISTRATION
THE UNIVERSITY OF ALABAMA

Department: ISM Date: 12/11/2017

Course Number: MIS 466 Course Title: Introduction to Cybercrime and Digital Forensics

Effective Date: August 1, 2018

PART ONE

(To be completed by the individual proposing the course.)

I. GENERAL INFORMATION

A. Description (25 words or less):

This course introduces the topics of cybercrime and digital forensics. Students will learn different aspects of cybercrime and methods to uncover, protect and analyze digital evidence.

B. 1. Prerequisite(s): None

2. Corequisite(s): None

3. Other: _____

C. Course Level: Upper Division Undergraduate
(Lower Division Undergraduate, Upper Division Undergraduate, Graduate I or Graduate II)

D. Format: 3 Hours of lecture per week

_____ Hours of discussion (recitation per week)

_____ Hours of laboratory (or field work) per week

Other instructional methods and modes: _____

_____

_____

E. Credit Hours: 3

II. ACADEMIC INFORMATION

A. Course Objectives:

Upon the completion of this course, students will be able to:

1. understand the role and purpose of digital forensics.
2. understand the legal aspects of cybercrime, evidence collection, and testimony.
3. practice the skills required to be a first responder.
4. demonstrate the ability to acquire a forensically sound image.
5. demonstrate the ability to accurately perform a simple analysis of digital evidence.
6. produce a report of digital evidence analysis and draw logical conclusions based on the evidence.

B. What course or courses, if any, will this course replace? Implementation of this course, if it does not replace an existing course, may cause enrollment reductions in other courses. Please list all courses in which such enrollment declines may be expected.

This is a new course.

C. What is the justification for proposing the course at this time?

Cybercrime and digital forensics are increasingly important areas of study. Tools are becoming more powerful and attacks more sophisticated. Consequently, there is a growing need for graduates with the skills to investigate these crimes.

D. Name the current faculty who are qualified to teach this course. What specific qualifications and capabilities must an individual have in order to teach this course?

Dr. Greg Bott and Dr. Allen Johnston

To teach this course, an individual must have some experience in digital forensics investigation and analysis.

E. This course is designed for the following curricula (programs):

MIS BS curriculum

F. This course will be required for the following majors and minors:

None

G. Attach an outline of the course of at least one page in length and name any textbooks or principal readings that will be used. (This request is not intended to bind future instructors to a detailed program, but only to establish the general scope, nature and level of the course.)

PART TWO

(To be completed by the department head, alone or in consultation with the proposer.)

I. **BUDGETARY INFORMATION**

A. Anticipated frequency of offering:

_____ section(s) each fall semester __1__ section(s) each spring semester

_____ section(s) during summer school _____ according to demand

B. Estimated total enrollment:

First Year: ___15_____

Second Year: ___20_____

Third Year ___25_____

C. Estimated capacity per section:

Lecture: ____45_____

Discussion _____

Laboratory _____

D. How does this course impact on the mission of the College and department? This course is an elective for the MIS major and addresses cyber security – a focus area for the MIS faculty and a research focus for the University.

E. What resources will be needed to teach this course and where will they come from? The department will have sufficient resources once open lines are filled in 2017-2018.

F. Is there agreement within the department that the course is needed and that resources will be available to teach this course? Yes

G. Is there any indication that this course duplicates course work offered elsewhere in the College or University? No

II. **EVALUATION**

Describe the system of evaluation that will be used to determine whether this course should be continued in the departmental program. (It would be helpful to relate this system of evaluation to the kinds of information, requested in PART ONE, Section II-Academic Information and PART TWO, Section I-Budgetary Information).

As we have sufficient faculty resources to offer the course, we will offer it as long as there is sufficient student demand.

Proposed by: 12/11/17

Name Date

Approved by: 12/11/17

Department Head/Director Date

Dean Date

Conditions of approval, if any:

Upon final approval, a course inventory form must be completed and forwarded to the Office for Academic Affairs.

PROPOSAL TO OFFER A NEW COURSE

COLLEGE OF COMMERCE AND BUSINESS ADMINISTRATION
THE UNIVERSITY OF ALABAMA

Department: ISM Date: 12/11/2017

Course Number: MIS 564 Course Title: Organizational Security Management

Effective Date: August 1, 2018

PART ONE

(To be completed by the individual proposing the course.)

I. GENERAL INFORMATION

A. Description (25 words or less):

The course is intended to teach students how to develop and apply an information security management plan to an organization.

B. 1. Prerequisite(s): None

2. Corequisite(s): None

3. Other: _____

C. Course Level: Graduate I
(Lower Division Undergraduate, Upper Division Undergraduate, Graduate I or Graduate II)

D. Format: 3 Hours of lecture per week

_____ Hours of discussion (recitation per week)

_____ Hours of laboratory (or field work) per week

Other instructional methods and modes: _____

_____

_____

E. Credit Hours: 3

II. ACADEMIC INFORMATION

A. Course Objectives:

Upon the completion of this course, students will be able to:

1. understand the strategic importance of effective, interdisciplinary, and multifunctional organizational information security governance and information security management program and its execution.
2. compare various types of organizational information security governance structures, information security management programs, and their critical components.
3. develop a working knowledge of types of policy, how policy is created, how to manage policy.
4. understand the importance of compliance and training in information security risk management.
5. differentiate between stakeholder groups and their respective roles, investment, and interest in an effective organizational information security management program.
6. assess the ethical, social, environmental, and risk considerations for organizational information security governance.
7. evaluate the effectiveness and potential application of multiple information security governance structures and information security management programs for variant organizational scenarios with consideration for strategic, operational, ethical, social, environmental, and risk factors.

B. What course or courses, if any, will this course replace? Implementation of this course, if it does not replace an existing course, may cause enrollment reductions in other courses. Please list all courses in which such enrollment declines may be expected.

This is a new course.

C. What is the justification for proposing the course at this time?

Information security is a managerial problem, and as such, students must understand the implications for managing the organization's efforts to securing its valuable resources. To date, that understanding has not been reflected in the MIS curricula. Further, as the University and Culverhouse College of Commerce continue to grow their commitment and capacity for research and education in cyber security, it is critical that the organizational element of cyber security is attended to in those efforts.

D. Name the current faculty who are qualified to teach this course. What specific qualifications and capabilities must an individual have in order to teach this course?

Dr. Allen Johnston, Dr. Greg Bott, Dr. YuanYuan Chen

To teach this course, an individual must have some experience in information security management and have conducted research in organizational information security.

E. This course is designed for the following curricula (programs):

MIS MS curriculum

F. This course will be required for the following majors and minors:

MIS MS majors

G. Attach an outline of the course of at least one page in length and name any textbooks or principal readings that will be used. (This request is not intended to bind future instructors to a detailed program, but only to establish the general scope, nature and level of the course.)

PART TWO

(To be completed by the department head, alone or in consultation with the proposer.)

I. **BUDGETARY INFORMATION**

A. Anticipated frequency of offering:

__1__ section(s) each fall semester _____ section(s) each spring semester

_____ section(s) during summer school _____ according to demand

B. Estimated total enrollment:

First Year: ___20_____

Second Year: ___25_____

Third Year ___30_____

C. Estimated capacity per section:

Lecture: _____50_____

Discussion _____

Laboratory _____

D. How does this course impact on the mission of the College and department? This is a required course for the proposed MS in MIS program. The topic falls within the area of cyber security, a focus of the MIS faculty and a research area of the University.

E. What resources will be needed to teach this course and where will they come from? The department will have sufficient resources once open lines are filled in 2017-2018.

F. Is there agreement within the department that the course is needed and that resources will be available to teach this course? Yes

G. Is there any indication that this course duplicates course work offered elsewhere in the College or University? No

II. **EVALUATION**

Describe the system of evaluation that will be used to determine whether this course should be continued in the departmental program. (It would be helpful to relate this system of evaluation to the kinds of information, requested in PART ONE, Section II-Academic Information and PART TWO, Section I-Budgetary Information).

As we have sufficient faculty resources to offer the course, we will offer it as long as there is sufficient student demand.

Proposed by: Yuanyuan Chen 12/08/2017

Name Date

Approved by: 12/11/2017

Department Head/Director Date

Dean Date

Conditions of approval, if any:

Upon final approval, a course inventory form must be completed and forwarded to the Office for Academic Affairs.

PROPOSAL TO OFFER A NEW COURSE

COLLEGE OF COMMERCE AND BUSINESS ADMINISTRATION
THE UNIVERSITY OF ALABAMA

Department: ISM Date: 12/11/2017

Course Number: MIS 566 Course Title: Introduction to Cybercrime and Digital Forensics

Effective Date: August 1, 2018

PART ONE

(To be completed by the individual proposing the course.)

I. GENERAL INFORMATION

A. Description (25 words or less):

This course introduces the topics of cybercrime and digital forensics. Students will learn different aspects of cybercrime and methods to uncover, protect and analyze digital evidence.

B. 1. Prerequisite(s): None

2. Corequisite(s): None

3. Other: _____

C. Course Level: Graduate I
(Lower Division Undergraduate, Upper Division Undergraduate, Graduate I or Graduate II)

D. Format: 3 Hours of lecture per week

_____ Hours of discussion (recitation per week)

_____ Hours of laboratory (or field work) per week

Other instructional methods and modes: _____

_____

_____

E. Credit Hours: 3

II. ACADEMIC INFORMATION

A. Course Objectives:

Upon the completion of this course, students will be able to:

1. understand the role and purpose of digital forensics.
2. understand the legal aspects of cybercrime, evidence collection, and testimony.
3. practice the skills required to be a first responder.
4. demonstrate the ability to acquire a forensically sound image.
5. demonstrate the ability to accurately perform a simple analysis of digital evidence.
6. produce a report of digital evidence analysis and draw logical conclusions based on the evidence.

B. What course or courses, if any, will this course replace? Implementation of this course, if it does not replace an existing course, may cause enrollment reductions in other courses. Please list all courses in which such enrollment declines may be expected.

This is a new course.

C. What is the justification for proposing the course at this time?

Cybercrime and digital forensics are increasingly important areas of study. Tools are becoming more powerful and attacks more sophisticated. Consequently, there is a growing need for graduates with the skills to investigate these crimes.

D. Name the current faculty who are qualified to teach this course. What specific qualifications and capabilities must an individual have in order to teach this course?

Dr. Greg Bott and Dr. Allen Johnston

To teach this course, an individual must have some experience in digital forensics investigation and analysis.

E. This course is designed for the following curricula (programs):

MIS MS curriculum

F. This course will be required for the following majors and minors:

MIS MS students

G. Attach an outline of the course of at least one page in length and name any textbooks or principal readings that will be used. (This request is not intended to bind future instructors to a detailed program, but only to establish the general scope, nature and level of the course.)

PART TWO

(To be completed by the department head, alone or in consultation with the proposer.)

I. **BUDGETARY INFORMATION**

A. Anticipated frequency of offering:

_____ section(s) each fall semester __1__ section(s) each spring semester

_____ section(s) during summer school _____ according to demand

B. Estimated total enrollment:

First Year: ___20_____

Second Year: ___25_____

Third Year ___30_____

C. Estimated capacity per section:

Lecture: ____50_____

Discussion _____

Laboratory _____

D. How does this course impact on the mission of the College and department? This is a required course for the proposed MS in MIS program. The topic falls within the area of cybersecurity, a focus area of the MIS faculty and a research area for the University.

E. What resources will be needed to teach this course and where will they come from? The department will have sufficient resources once open lines are filled in 2017-2018.

F. Is there agreement within the department that the course is needed and that resources will be available to teach this course? Yes

G. Is there any indication that this course duplicates course work offered elsewhere in the College or University?

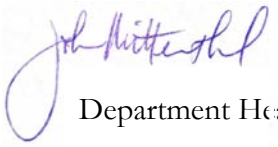
II. **EVALUATION**

Describe the system of evaluation that will be used to determine whether this course should be continued in the departmental program. (It would be helpful to relate this system of evaluation to the kinds of information, requested in PART ONE, Section II-Academic Information and PART TWO, Section I-Budgetary Information).

As we have sufficient faculty resources to offer the course, we will offer it as long as there is sufficient student demand.

Proposed by:  12/11/17

Name Date

Approved by:  12/11/17

Department Head/Director Date

Dean Date

Conditions of approval, if any:

Upon final approval, a course inventory form must be completed and forwarded to the Office for Academic Affairs.

PROPOSAL TO OFFER A NEW COURSE

COLLEGE OF COMMERCE AND BUSINESS ADMINISTRATION
THE UNIVERSITY OF ALABAMA

Department: *Information Systems, Statistics, and Management Science*
Date: *January, 2018*
Course Number: *ST 440*
Course Title: *Statistical Programming and Computing with R*
Effective Date: *Fall 2018*

PART ONE

(To be completed by the individual proposing the course.)

I. GENERAL INFORMATION

A. Description (25 words or less):

This course explores the syntax of the R language and its capabilities for statistical data analysis, computing, and graphics.

B. 1. Prerequisite(s): *ST 260*

2 Corequisite(s): *None*

3. Other: *NA*

C. Course Level: *Upper Division Undergraduate*
(Lower Division Undergraduate, Upper Division Undergraduate, Graduate I or Graduate II)

D. Format: *3 Hours of lecture per week*

_____ Hours of discussion (recitation per week)

_____ Hours of laboratory (or field work) per week

Other instructional methods and modes: _____
_____
_____

E . Credit Hours: *3*

II ACADEMIC INFORMATION

A. Course Objectives:

Every field of science relies on experiments supported by statistical analysis fulfilled by means of statistical software. The proposed course aims to provide students with necessary knowledge about the statistical package R. Upon the completion of the course, students should be able to use standard statistical built-in functions and write their own programming code. The knowledge of basic random number generating commands will allow conducting various simulation studies. Students will become familiar with standard graphical tools and will be able to use them effectively. Finally, students will be able to conduct standard statistical analysis using R.

B. What course or courses, if any, will this course replace? Implementation of this course, if it does not replace an existing course, may cause enrollment reductions in other courses. Please list all courses in which such enrollment declines may be expected.

There is no course replacement associated with this proposal.

C. What is the justification for proposing the course at this time?

This will be an elective in the new Statistics Minor. It will also help prepare Actuary students who are required to understand and interpret R output in professional Actuary exams offered by SOA.

D. Name the current faculty who are qualified to teach this course. What specific qualifications and capabilities must an individual have in order to teach this course?

Volodymyr Melnykov, Michael Porter, Bruce Barrett
Proficiency with R and Statistical Methods are required to successfully teach the proposed course.

E .This course is designed for the following curricula (programs):

The proposed undergraduate Minor in Statistics.

F .This course will be required for the following majors and minors:

None. It is an elective for the proposed Minor in Statistics.

G. Attach an outline of the course of at least one page in length and name any textbooks or principal readings that will be used. (This request is not intended to bind future instructors to a detailed program, but only to establish the general scope, nature and level of the course)

See the attached outline of the course.

PART TWO

(To be completed by the department head, alone or in consultation with the proposer)

I. **BUDGETARY INFORMATION**

A Anticipated frequency of offering:

___1_ section(s) each fall semester _____ section(s) each spring semester

_____ section(s) during summer school _____ according to demand

B Estimated total enrollment (undergraduate / graduate):

First Year: ____10_____

Second Year: ____15_____

Third Year ____15_____

C Estimated capacity per section:

Lecture: _____40_____

Discussion _____0_____

Laboratory _____0_____

D How does this course impact on the mission of the College and department?

This course helps address the growing demand of statistical and computational proficiency in our students. It also helps to build up student capacity to support projects through the Business Analytics Institute.

E What resources will be needed to teach this course and where will they come from?

With the addition of two new faculty lines in Applied Statistics (starting in Fall 2018), no additional resources are needed.

F Is there agreement within the department that the course is needed and that resources will be available to teach this course?

Yes

G Is there any indication that this course duplicates course work offered elsewhere in the College or University?

No

II. EVALUATION

Describe the system of evaluation that will be used to determine whether this course should be continued in the departmental program. (It would be helpful to relate this system of evaluation to the kinds of information, requested in PART ONE, Section II-Academic Information and PART TWO, Section I-Budgetary Information).

After three years, we will evaluate the statistics minor to ensure that enrollment is meeting the requirements to justify resource investments in the program.

Proposed by: *Volodymyr Melnykov* *01/25/18*
Name Date

Approved by: John Mittenthal March 7, 2018
Department Head/Director Date

Dean Date

Conditions of approval, if any:

Upon final approval, a course inventory form must be completed and forwarded to the Office for Academic Affairs.

ST 440 Statistical Programming and Computing with R

Text: *"R for everyone: advanced analytics and graphics" by Jared Lander, 2nd edition, 2017. This textbook provides a detailed introduction to R and will be a valuable resource after the course completion.*

Prerequisites: *Stat 260 or equivalent is required for the course enrollment; knowledge of programming concepts is not mandatory.*

Course description: *This course explores the syntax and capabilities of the R language. R commands, expressions, and matrix operations will be considered. Operations with internal built-in as well as user-written functions will be covered. Programming in R as well as optimization and graphical capabilities will be explored. Finally, the application of R to statistical problem solving, including linear and nonlinear regression, will be considered.*

Student learning objectives: *Every field of science relies on experiments supported by statistical analysis and fulfilled by means of statistical software. This course aims to provide students with necessary knowledge about the statistical package R. Upon the completion of the course, students will be able to: (i) use standard built-in R functions and write their own programming code, (ii) use basic random number generating commands to conduct simulation studies, (iii) use standard graphical tools, and (iv) conduct standard statistical analysis using R.*

Course Topics*:*

Topic:	*Week*
Installation and basic preliminaries	*1*
Syntax of R: commands, expressions	*1*
Data objects	*2*
Vector and matrix operations	*3-4*
Elements of programming	*5-6*
Standard built-in functions	*7-8*
Writing functions	*9*
Graphical capabilities	*10*
Optimization and root finding	*11*
Statistical problem solving	*12-15*
Basic statistical methods	*12*
Linear and logistic regression	*13*
Nonlinear regression	*14*
Other statistical methods	*15*

PROPOSAL TO OFFER A NEW COURSE

COLLEGE OF COMMERCE AND BUSINESS ADMINISTRATION
THE UNIVERSITY OF ALABAMA

Department: *ISM*
Date: *Jan 2018*
Course Number: *ST 445*
Course Title: *Introduction to Statistical Learning and Data Mining*
Effective Date: *Fall 2018*

PART ONE

(To be completed by the individual proposing the course.)

I. GENERAL INFORMATION

A. Description (25 words or less):

This course offers an introduction to the field of statistical learning, an essential toolkit for making sense of vast and complex data sets.

B. 1. Prerequisite(s): ST 452

2. Corequisite(s): None

3. Other: NA

C. Course Level: *Upper Division Undergraduate*
(Lower Division Undergraduate, Upper Division Undergraduate, Graduate I or Graduate II)

D. Format: 3 Hours of lecture per week

_____ Hours of discussion (recitation per week)

_____ Hours of laboratory (or field work) per week

Other instructional methods and modes: _____

_____

_____

E. Credit Hours: 3

II. ACADEMIC INFORMATION

A. Course Objectives:

This course offers an introduction to the field of statistical learning, an essential toolkit for making sense of the vast and complex data sets that have emerged in fields ranging from biology to finance to marketing to astrophysics in the past twenty years. Topics include linear and logistic regression, classification, resampling methods, shrinkage/penalized approaches, tree-based methods, generalized additive models, principal component analysis, and clustering.

B. What course or courses, if any, will this course replace? Implementation of this course, if it does not replace an existing course, may cause enrollment reductions in other courses. Please list all courses in which such enrollment declines may be expected.

This will not replace any course at the undergraduate level. No enrollment declines are expected in other undergraduate courses.

C. What is the justification for proposing the course at this time?

This will be an elective in the new Statistics Minor. It will also be part of a course sequence preparing Actuary students to take the new Statistics for Risk Modeling Exam offered by the SOA.

D. Name the current faculty who are qualified to teach this course. What specific qualifications and capabilities must an individual have in order to teach this course?

Qualified faculty includes Michael Porter, Volodymyr Melnykov, Jim Cochran

Instructors of this course should be familiar with theoretical and applied concepts in statistical learning and data mining as well as knowledge of the R programming language.

E. This course is designed for the following curricula (programs):

The proposed undergraduate Minor in Statistics.

F. This course will be required for the following majors and minors:

None. It is an elective for the proposed Minor in Statistics.

G. Attach an outline of the course of at least one page in length and name any textbooks or principal readings that will be used. (This request is not intended to bind future instructors to a detailed program, but only to establish the general scope, nature and level of the course.)

See accompanying outline

PART TWO

(To be completed by the department head, alone or in consultation with the proposer.)

I. **BUDGETARY INFORMATION**

A. Anticipated frequency of offering:

_____ section(s) each fall semester __1__ section(s) each spring semester

_____ section(s) during summer school _____ according to demand

B. Estimated total enrollment (undergraduate):

First Year: _15_____

Second Year: _20_____

Third Year _20_____

C. Estimated capacity per section:

Lecture: _40_____

Discussion __0_____

Laboratory __0_____

D. How does this course impact on the mission of the College and department?

This course helps address the growing demand of statistical and computational proficiency in our students. It also helps to build up student capacity to support projects through the Business Analytics Institute.

E. What resources will be needed to teach this course and where will they come from?

With the addition of two new faculty lines in Applied Statistics (starting in Fall 2018), no additional resources are needed.

F. Is there agreement within the department that the course is needed and that resources will be available to teach this course?

Yes

G. Is there any indication that this course duplicates course work offered elsewhere in the College or University?

No.

II. EVALUATION

Describe the system of evaluation that will be used to determine whether this course should be continued in the departmental program. (It would be helpful to relate this system of evaluation to the kinds of information, requested in PART ONE, Section II-Academic Information and PART TWO, Section I-Budgetary Information).

After three years, we will evaluate the statistics minor to ensure that enrollment is meeting the requirements to justify resource investments in the program.

Proposed by: Michael Porter — January 26, 2018
Name — Date

Approved by: John Mittenthal — March 7, 2018
Department Head/Director — Date

Dean — Date

Conditions of approval, if any:

Upon final approval, a course inventory form must be completed and forwarded to the Office for Academic Affairs.

ST 445: *Introduction to Statistical Learning and Data Mining*

Course Prerequisites:

Students taking this course should be familiar with the concepts from introductory statistics including confidence intervals, hypothesis testing, and linear regression. This is satisfied with ST 260 and ST 452.

Course Description:

This course offers an introduction to the field of statistical learning, an essential toolkit for making sense of the vast and complex data sets that have emerged in fields ranging from biology to finance to marketing to astrophysics in the past twenty years. Topics include linear and logistic regression, classification, resampling methods, shrinkage/penalized approaches, tree-based methods, generalized additive models, principal component analysis, and clustering.

Student Learning Objectives:

Students will learn how and when to use statistical learning methods, understand their comparative strengths and weaknesses, and how to critically evaluate their performance. Students completing this course should be able to: (i) construct and apply novel statistical learning methods for predictive modeling, (ii) use unsupervised learning methods to find structure in data, and (iii) properly select, tune, and assess models.

Required Textbooks:

- *An Introduction to Statistical Learning: with Applications in R* by James, Witten, Hastie and Tibshirani. An electronic version of this book is freely available at http://www-bcf.usc.edu/~gareth/ISL/.

Software:

This course requires the statistical software R and some additional document generation software.

- R (http://cran.us.r-project.org) is a free command-line based statistical language.
- RStudio is a free IDE for R (http://www.rstudio.com/ide).
- LaTex (http://www.tug.org) is a free typesetting system for producing technical documents (e.g., journal articles and presentations). Install MikTex for windows, MacTeX for mac, TeXLive for Linux.

All of these programs are free and cross-platform (Windows, Mac, Linux). Install R first, then RStudio. Use the latest versions of each. More detailed instructions can be found here: http://www.reed.edu/data-at-reed/resources/#R

Course Outline and Schedule:

The list below shows the assigned chapter from ISL, suggested schedule, and homework assignments.

1. Introduction (Week 1)
    - Install: R, RStudio, LaTex
    - Produce sample RMarkdown document in html and pdf formats
    - Install R packages: ISLR, MASS, ggplot2, dplyr, gbm, glmnet, rpart, e1071
2. Statistical Learning (Week 2)
    - Exercises 2.4: 1-10
3. Linear Regression (Week 3-4)
    - Exercises 3.7: 1-7, 9-10, 13-15
4. Classification (Week 5)
    - Exercises 4.7: 1-13
5. Resampling Methods (Week 6)
    - Exercises 5.4: 1-9
6. Linear Model Selection and Regularization (Week 7-8)
    - Exercises 6.8: 1-11
7. Moving Beyond Linearity (Week 9)
    - Exercises 7.9: 3-4, 6-7, 9-12
8. Tree-Based Methods (Week 10)
    - Exercises 8.4: 1-6, 7-8, 10-11
9. Support Vector Machines (Week 11)
    - Exercises 9.7: 1, 3, 5, 7-8
10. Unsupervised Learning (Week 12-13)
    - Exercises: 1-3, 7-11
11. Final Project (Weeks 14-15)

PROPOSAL TO OFFER A NEW COURSE

COLLEGE OF COMMERCE AND BUSINESS ADMINISTRATION
THE UNIVERSITY OF ALABAMA

Department: *Information Systems, Statistics, and Management Science*
Date: *January, 2018*
Course Number: ST *540*
Course Title: *Statistical Programming and Computing with R*
Effective Date: *Fall 2018*

PART ONE

(To be completed by the individual proposing the course.)

I. GENERAL INFORMATION

A. Description (25 words or less):

This course explores the syntax of the R language and its capabilities for statistical data analysis, computing, and graphics.

B. 1. Prerequisite(s): *ST 260*

2. Corequisite(s): *None*

3. Other: *NA*

C. Course Level: *Graduate I*
(Lower Division Undergraduate, Upper Division Undergraduate, Graduate I or Graduate II)

D. Format: *3 Hours of lecture per week*

_____ Hours of discussion (recitation per week)

_____ Hours of laboratory (or field work) per week

Other instructional methods and modes: _____
_____
_____

E. Credit Hours: *3*

II ACADEMIC INFORMATION

A. Course Objectives:

Every field of science relies on experiments supported by statistical analysis fulfilled by means of statistical software. The proposed course aims to provide students with necessary knowledge about the statistical package R. Upon the completion of the course, students should be able to use standard statistical built-in functions and write their own programming code. The knowledge of basic random number generating commands will allow conducting various simulation studies. Students will become familiar with standard graphical tools and will be able to effectively use them. Finally, students will be able to conduct standard statistical analysis using R.

B. What course or courses, if any, will this course replace? Implementation of this course, if it does not replace an existing course, may cause enrollment reductions in other courses. Please list all courses in which such enrollment declines may be expected.

There is no course replacement associated with this proposal.

C. What is the justification for proposing the course at this time?

The undergraduate version of this course will be an elective in the new Statistics Minor. It will also help prepare Actuary students who are required to understand and interpret R output in professional Actuary exams offered by SOA. At the graduate level, there is a large demand for an R course not only among Applied Statistics students but also across the University.

D. Name the current faculty who are qualified to teach this course. What specific qualifications and capabilities must an individual have in order to teach this course?

Volodymyr Melnykov, Michael Porter, Bruce Barrett
Proficiency with R and Statistical Methods are required to successfully teach the proposed course.

E .This course is designed for the following curricula (programs):

MS in Applied Statistics

F .This course will be required for the following majors and minors:

None. It is an elective for the MS in Applied Statistics.

G. Attach an outline of the course of at least one page in length and name any textbooks or principal readings that will be used. (This request is not intended to bind future instructors to a detailed program, but only to establish the general scope, nature and level of the course)

See the attached outline of the course.

PART TWO

(To be completed by the department head, alone or in consultation with the proposer)

I. **BUDGETARY INFORMATION**

A Anticipated frequency of offering:

_1__ section(s) each fall semester _____ section(s) each spring semester

_____ section(s) during summer school _____ according to demand

B Estimated total enrollment (graduate):

First Year: ____10_____

Second Year: ____15_____

Third Year ____15_____

C Estimated capacity per section:

Lecture: _____40_____

Discussion _____0_____

Laboratory _____0_____

D How does this course impact on the mission of the College and department?

This course helps address the growing demand of statistical and computational proficiency in our students. It also helps to build up student capacity to support projects through the Business Analytics Institute.

E What resources will be needed to teach this course and where will they come from?

With the addition of two new faculty lines in Applied Statistics (starting in Fall 2018), no additional resources are needed.

F Is there agreement within the department that the course is needed and that resources will be available to teach this course?

Yes

G Is there any indication that this course duplicates course work offered elsewhere in the College or University?

No

II. EVALUATION

Describe the system of evaluation that will be used to determine whether this course should be continued in the departmental program. (It would be helpful to relate this system of evaluation to the kinds of information, requested in PART ONE, Section II-Academic Information and PART TWO, Section I-Budgetary Information).

Because this course can be used for several programs (undergraduate minor in statistics via a potential accelerated master's program, master's in applied statistics, potential elective for masters students across campus), meeting minimum enrollments is not a serious concern. However, after three years, we will evaluate the statistics minor and applied statistics MS programs to ensure that enrollment is meeting the requirements to justify resource investments in these programs.

Proposed by: *Volodymyr Melnykov* *01/25/18*
Name Date

Approved by: John Mittenthal March 7, 2018
Department Head/Director Date

_____
Dean Date

Conditions of approval, if any:

Upon final approval, a course inventory form must be completed and forwarded to the Office for Academic Affairs.

ST 540 Statistical Programming and Computing with R

Text: *"R for everyone: advanced analytics and graphics" by Jared Lander, 2nd edition, 2017. This textbook provides a detailed introduction to R and will be a valuable resource after the course completion.*

Prerequisites: *Stat 260 or equivalent is required for the course enrollment; knowledge of programming concepts is not mandatory.*

Course description: *This course explores the syntax and capabilities of the R language. R commands, expressions, and matrix operations will be considered. Operations with internal built-in as well as user-written functions will be covered. Programming in R as well as optimization and graphical capabilities will be explored. Finally, the application of R to statistical problem solving, including linear and nonlinear regression, will be considered.*

Student learning objectives: *Every field of science relies on experiments supported by statistical analysis and fulfilled by means of statistical software. This course aims to provide students with necessary knowledge about the statistical package R. Upon the completion of the course, students will be able to: (i) use standard built-in R functions and write their own programming code, (ii) use basic random number generating commands to conduct simulation studies, (iii) use standard graphical tools, (iv) conduct standard statistical analysis using R, and (v) use R programming in a research project.*

Course Topics*:*

Topic:	*Week*
Installation and basic preliminaries	*1*
Syntax of R: commands, expressions	*1*
Data objects	*2*
Vector and matrix operations	*3-4*
Elements of programming	*5-6*
Standard built-in functions	*7-8*
Writing functions	*9*
Graphical capabilities	*10*
Optimization and root finding	*11*
Statistical problem solving	*12-15*
Basic statistical methods	*12*
Linear and logistic regression	*13*
Nonlinear regression	*14*
Other statistical methods	*15*

PROPOSAL TO OFFER A NEW COURSE

COLLEGE OF COMMERCE AND BUSINESS ADMINISTRATION
THE UNIVERSITY OF ALABAMA

Department: *ISM*
Date: *Jan 2018*
Course Number: *ST 545*
Course Title: *Introduction to Statistical Learning and Data Mining*
Effective Date: *Fall 2018*

PART ONE

(To be completed by the individual proposing the course.)

I. GENERAL INFORMATION

A. Description (25 words or less):

This course offers an introduction to the field of statistical learning, an essential toolkit for making sense of vast and complex data sets.

B. 1. Prerequisite(s): ST 452 or ST 552 or ST 560

2. Corequisite(s): None

3. Other: NA

C. Course Level: *Graduate I*
(Lower Division Undergraduate, Upper Division Undergraduate, Graduate I or Graduate II)

D. Format: 3 Hours of lecture per week

_____ Hours of discussion (recitation per week)

_____ Hours of laboratory (or field work) per week

Other instructional methods and modes: _____

_____

_____

E. Credit Hours: 3

II. ACADEMIC INFORMATION

A. Course Objectives:

This course offers an introduction to the field of statistical learning, an essential toolkit for making sense of the vast and complex data sets that have emerged in fields ranging from biology to finance to marketing to astrophysics in the past twenty years. Topics include linear and logistic regression, classification, resampling methods, shrinkage/penalized approaches, tree-based methods, generalized additive models, principal component analysis, and clustering.

B. What course or courses, if any, will this course replace? Implementation of this course, if it does not replace an existing course, may cause enrollment reductions in other courses. Please list all courses in which such enrollment declines may be expected.

It is possible that MS-APST students (in the Statistics Track) will opt to take this course over ST 531(Data Mining I) as an elective. Thus we anticipate a slight enrollment decrease in ST 531of up to 5 students per year.

C. What is the justification for proposing the course at this time?

The undergraduate version of this course will be an elective in the new Statistics Minor. It will also be part of a course sequence preparing Actuary students to take the new Statistics for Risk Modeling Exam offered by the SOA.

D. Name the current faculty who are qualified to teach this course. What specific qualifications and capabilities must an individual have in order to teach this course?

Qualified faculty includes Michael Porter, Volodymyr Melnykov, Jim Cochran

Instructors of this course should be familiar with theoretical and applied concepts in statistical learning and data mining as well as knowledge of the R programming language.

E. This course is designed for the following curricula (programs):

MS in Applied Statistics

F. This course will be required for the following majors and minors:

None. It is an elective for the MS in Applied Statistics.

G. Attach an outline of the course of at least one page in length and name any textbooks or principal readings that will be used. (This request is not intended to bind future instructors to a detailed program, but only to establish the general scope, nature and level of the course.)

See accompanying outline

PART TWO

(To be completed by the department head, alone or in consultation with the proposer.)

I. **BUDGETARY INFORMATION**

A. Anticipated frequency of offering:

_____ section(s) each fall semester __1__ section(s) each spring semester

_____ section(s) during summer school _____ according to demand

B. Estimated total enrollment (graduate):

First Year: _10_____

Second Year: _15_____

Third Year _15_____

C. Estimated capacity per section:

Lecture: _40_____

Discussion __0_____

Laboratory __0_____

D. How does this course impact on the mission of the College and department?

This course helps address the growing demand of statistical and computational proficiency in our students. It also helps to build up student capacity to support projects through the Business Analytics Institute.

E. What resources will be needed to teach this course and where will they come from?

With the addition of two new faculty lines in Applied Statistics (starting in Fall 2018), no additional resources are needed.

F. Is there agreement within the department that the course is needed and that resources will be available to teach this course?

Yes

G. Is there any indication that this course duplicates course work offered elsewhere in the College or University?

There is minimal overlap between the proposed course and ST531 (Data Mining I) in the areas of linear regression, decision trees, and classification. However these are a small component of the course (< 3 weeks).

II. EVALUATION

Describe the system of evaluation that will be used to determine whether this course should be continued in the departmental program. (It would be helpful to relate this system of evaluation to the kinds of information, requested in PART ONE, Section II-Academic Information and PART TWO, Section I-Budgetary Information).

Because this course can be used for several programs (undergraduate minor in statistics via a potential accelerated master's program, master's in applied statistics, potential elective for masters students across campus), meeting minimum enrollments is not a serious concern. However, after three years, we will evaluate the statistics minor and applied statistics MS programs to ensure that enrollment is meeting the requirements to justify resource investments in these programs.

Proposed by: Michael Porter — January 26, 2018
Name — Date

Approved by: John Mittenthal — March 7, 2018
Department Head/Director — Date

_____
Dean — Date

Conditions of approval, if any:

Upon final approval, a course inventory form must be completed and forwarded to the Office for Academic Affairs.

ST 545: *Introduction to Statistical Learning and Data Mining*

Course Prerequisites:

Students taking this course should be familiar with the concepts from introductory statistics including confidence intervals, hypothesis testing, and linear regression. This is satisfied with ST 260 and ST 452.

Course Description:

This course offers an introduction to the field of statistical learning, an essential toolkit for making sense of the vast and complex data sets that have emerged in fields ranging from biology to finance to marketing to astrophysics in the past twenty years. Topics include linear and logistic regression, classification, resampling methods, shrinkage/penalized approaches, tree-based methods, generalized additive models, principal component analysis, and clustering.

Student Learning Objectives:

Students will learn how and when to use statistical learning methods, understand their comparative strengths and weaknesses, and how to critically evaluate their performance. Students completing this course should be able to: (i) construct and apply novel statistical learning methods for predictive modeling, (ii) use unsupervised learning methods to find structure in data, (iii) properly select, tune, and assess models, and (iv) use statistical learning methods in a research project.

Required Textbooks:

- *An Introduction to Statistical Learning: with Applications in R* by James, Witten, Hastie and Tibshirani. An electronic version of this book is freely available at http://www-bcf.usc.edu/~gareth/ISL/.

Software:

This course requires the statistical software R and some additional document generation software.

- R (http://cran.us.r-project.org) is a free command-line based statistical language.
- RStudio is a free IDE for R (http://www.rstudio.com/ide).
- LaTex (http://www.tug.org) is a free typesetting system for producing technical documents (e.g., journal articles and presentations). Install MikTex for windows, MacTeX for mac, TeXLive for Linux.

All of these programs are free and cross-platform (Windows, Mac, Linux). Install R first, then RStudio. Use the latest versions of each. More detailed instructions can be found here: http://www.reed.edu/data-at-reed/resources/#R

Course Outline and Schedule:

The list below shows the assigned chapter from ISL, suggested schedule, and homework assignments.

1. Introduction (Week 1)
    - Install: R, RStudio, LaTex
    - Produce sample RMarkdown document in html and pdf formats
    - Install R packages: ISLR, MASS, ggplot2, dplyr, gbm, glmnet, rpart, e1071
2. Statistical Learning (Week 2)
    - Exercises 2.4: 1-10
3. Linear Regression (Week 3-4)
    - Exercises 3.7: 1-7, 9-10, 13-15
4. Classification (Week 5)
    - Exercises 4.7: 1-13
5. Resampling Methods (Week 6)
    - Exercises 5.4: 1-9
6. Linear Model Selection and Regularization (Week 7-8)
    - Exercises 6.8: 1-11
7. Moving Beyond Linearity (Week 9)
    - Exercises 7.9: 3-4, 6-7, 9-12
8. Tree-Based Methods (Week 10)
    - Exercises 8.4: 1-6, 7-8, 10-11
9. Support Vector Machines (Week 11)
    - Exercises 9.7: 1, 3, 5, 7-8
10. Unsupervised Learning (Week 12-13)
    - Exercises: 1-3, 7-11
11. Final Research Project (Weeks 14-15)

PROPOSAL TO OFFER A NEW COURSE

COLLEGE OF COMMERCE AND BUSINESS ADMINISTRATION
THE UNIVERSITY OF ALABAMA

Department: ISM

Date: 2/22/2018

Course Number: MIS 610

Course Title: Professional Development I

Effective Date: August 1, 2020

PART ONE

(To be completed by the individual proposing the course.)

I. GENERAL INFORMATION

A. Description (25 words or less):

Provides doctoral students with an introduction to the Management Information Systems (MIS) academic community.

B. 1. Prerequisite(s): None

2. Corequisite(s): None

3. Other: _____

C. Course Level: Graduate II
(Lower Division Undergraduate, Upper Division Undergraduate, Graduate I or Graduate II)

D. Format: 1 Hours of lecture per week

_____ Hours of discussion (recitation per week)

_____ Hours of laboratory (or field work) per week

Other instructional methods and modes: _____

_____

_____

E. Credit Hours: 1

II. ACADEMIC INFORMATION

A. Course Objectives:

Upon successful completion of this course, students will be able to:

1. Better understand the research process and the field of Management Information Systems in general
2. Reflect on their own teaching in order to improve it
3. Understand the academic job search process
4. Learn to develop and evaluate MIS research theories, design, and methods
5. Learn to critically evaluate MIS research articles

B. What course or courses, if any, will this course replace? Implementation of this course, if it does not replace an existing course, may cause enrollment reductions in other courses. Please list all courses in which such enrollment declines may be expected.

This is a new course.

C. What is the justification for proposing the course at this time?

This course is a part of the curriculum for the proposed MIS PhD program. The course will be offered in the Fall terms.

D. Name the current faculty who are qualified to teach this course. What specific qualifications and capabilities must an individual have in order to teach this course?

Any tenure-track MIS faculty member in the ISM Department of the Culverhouse College of Business

E. This course is designed for the following curricula (programs):

MIS PhD curriculum

F. This course will be required for the following majors and minors:

MIS PhD students

G. Attach an outline of the course of at least one page in length and name any textbooks or principal readings that will be used. (This request is not intended to bind future instructors to a detailed program, but only to establish the general scope, nature and level of the course.)

See next page.

MIS 610 Professional Development I

Course Description

Provides doctoral students with an introduction to the Management Information Systems (MIS) academic community.

Course Prerequisites and co-requisites

None

Learning Objectives:

Upon successful completion of this course, students will be able to:

1. Better understand the research process and the field of Management Information Systems in general
2. Reflect on their own teaching in order to improve it
3. Understand the academic job search process
4. Learn to develop and evaluate MIS research theories, design, and methods
5. Learn to critically evaluate MIS research articles

Required Texts

None

PART TWO

(To be completed by the department head, alone or in consultation with the proposer.)

I. **BUDGETARY INFORMATION**

A. Anticipated frequency of offering:

__1__ section(s) each fall semester _____ section(s) each spring semester

_____ section(s) during summer school _____ according to demand

B. Estimated total enrollment:

First Year: 2

Second Year: 2

Third Year 2

C. Estimated capacity per section:

Lecture: 5

Discussion 5

Laboratory 5

D. How does this course impact on the mission of the College and department?

This course supports the development of MIS doctoral students, and hence the research efforts of the MIS faculty whose research interests are generally in the areas of cybersecurity, data analytics, and healthcare analytics.

E. What resources will be needed to teach this course and where will they come from?

With the addition of four faculty in the past two years, and another three faculty in 2017-2018, the MIS faculty will have sufficient resources to support this course.

F. Is there agreement within the department that the course is needed and that resources will be available to teach this course?

Yes.

G. Is there any indication that this course duplicates course work offered elsewhere in the College or University?

No.

II. EVALUATION

Describe the system of evaluation that will be used to determine whether this course should be continued in the departmental program. (It would be helpful to relate this system of evaluation to the kinds of information, requested in PART ONE, Section II-Academic Information and PART TWO, Section I-Budgetary Information).

- The course will be needed as long as the MIS PhD program is offered.

Proposed by:	Allen Johnston	03/27/18
	Name	Date
Approved by:	John Mitchell	3/28/18
	Department Head/Director	Date
	Dean	Date

Conditions of approval, if any:

Upon final approval, a course inventory form must be completed and forwarded to the Office for Academic Affairs.

PROPOSAL TO OFFER A NEW COURSE

COLLEGE OF COMMERCE AND BUSINESS ADMINISTRATION
THE UNIVERSITY OF ALABAMA

Department: ISM

Date: 2/22/2018

Course Number: MIS 611

Course Title: Professional Development II

Effective Date: August 1, 2020

PART ONE

(To be completed by the individual proposing the course.)

I. GENERAL INFORMATION

A. Description (25 words or less):

Provides doctoral students with an introduction to the Management Information Systems (MIS) academic community.

B. 1. Prerequisite(s): None

2. Corequisite(s): None

3. Other: _____

C. Course Level: Graduate II
(Lower Division Undergraduate, Upper Division Undergraduate, Graduate I or Graduate II)

D. Format: 1 Hours of lecture per week

_____ Hours of discussion (recitation per week)

_____ Hours of laboratory (or field work) per week

Other instructional methods and modes: _____

_____

_____

E. Credit Hours: 1

II. ACADEMIC INFORMATION

A. Course Objectives:

Upon successful completion of this course, students will be able to:

1. Better understand the research process and the field of Management Information Systems in general
2. Reflect on their own teaching in order to improve it
3. Understand the academic job search process
4. Learn to develop and evaluate MIS research theories, design, and methods
5. Learn to critically evaluate MIS research articles

B. What course or courses, if any, will this course replace? Implementation of this course, if it does not replace an existing course, may cause enrollment reductions in other courses. Please list all courses in which such enrollment declines may be expected.

This is a new course.

C. What is the justification for proposing the course at this time?

This course is a part of the curriculum for the proposed MIS PhD program. The course will be offered in the Spring terms.

D. Name the current faculty who are qualified to teach this course. What specific qualifications and capabilities must an individual have in order to teach this course?

Any tenure-track MIS faculty member in the ISM Department of the Culverhouse College of Business

E. This course is designed for the following curricula (programs):

MIS PhD curriculum

F. This course will be required for the following majors and minors:

MIS PhD students

G. Attach an outline of the course of at least one page in length and name any textbooks or principal readings that will be used. (This request is not intended to bind future instructors to a detailed program, but only to establish the general scope, nature and level of the course.)

See next page.

MIS 611 Professional Development II

Course Description

Provides doctoral students with an introduction to the Management Information Systems (MIS) academic community.

Course Prerequisites and co-requisites

None

Learning Objectives:

Upon successful completion of this course, students will be able to:

1. Better understand the research process and the field of Management Information Systems in general
2. Reflect on their own teaching in order to improve it
3. Understand the academic job search process
4. Learn to develop and evaluate MIS research theories, design, and methods
5. Learn to critically evaluate MIS research articles

Required Texts

None

PART TWO

(To be completed by the department head, alone or in consultation with the proposer.)

I. BUDGETARY INFORMATION

A. Anticipated frequency of offering:

_____ section(s) each fall semester __1__ section(s) each spring semester

_____ section(s) during summer school _____ according to demand

B. Estimated total enrollment:

First Year: _____2_____

Second Year: _____2_____

Third Year _____2_____

C. Estimated capacity per section:

Lecture: _____5_____

Discussion _____5_____

Laboratory _____5_____

D. How does this course impact on the mission of the College and department?

This course supports the development of MIS doctoral students, and hence the research efforts of the MIS faculty whose research interests are generally in the areas of cybersecurity, data analytics, and healthcare analytics.

E. What resources will be needed to teach this course and where will they come from?

With the addition of four faculty in the past two years, and another three faculty in 2017-2018, the MIS faculty will have sufficient resources to support this course.

F. Is there agreement within the department that the course is needed and that resources will be available to teach this course?

Yes.

G. Is there any indication that this course duplicates course work offered elsewhere in the College or University?

No.

II. EVALUATION

Describe the system of evaluation that will be used to determine whether this course should be continued in the departmental program. (It would be helpful to relate this system of evaluation to the kinds of information, requested in PART ONE, Section II-Academic Information and PART TWO, Section I-Budgetary Information).

- The course will be needed as long as the MIS PhD program is offered.

Proposed by: Allen Johnston — 03/27/18
Name — Date

Approved by: John Mittenthal — 03/28/2018
Department Head/Director — Date

Dean — Date

Conditions of approval, if any:

Upon final approval, a course inventory form must be completed and forwarded to the Office for Academic Affairs.

PROPOSAL TO OFFER A NEW COURSE

COLLEGE OF COMMERCE AND BUSINESS ADMINISTRATION
THE UNIVERSITY OF ALABAMA

Department: ISM

Date: 2/22/2018

Course Number: MIS 612

Course Title: Professional Development III

Effective Date: August 1, 2020

PART ONE

(To be completed by the individual proposing the course.)

I. GENERAL INFORMATION

A. Description (25 words or less):

Provides doctoral students with an introduction to the Management Information Systems (MIS) academic community.

B. 1. Prerequisite(s): None

2. Corequisite(s): None

3. Other: _____

C. Course Level: Graduate II
(Lower Division Undergraduate, Upper Division Undergraduate, Graduate I or Graduate II)

D. Format: 1 Hours of lecture per week

_____ Hours of discussion (recitation per week)

_____ Hours of laboratory (or field work) per week

Other instructional methods and modes: _____

_____

_____

E. Credit Hours: 1

II. ACADEMIC INFORMATION

A. Course Objectives:

Upon successful completion of this course, students will be able to:

1. Better understand the research process and the field of Management Information Systems in general
2. Reflect on their own teaching in order to improve it
3. Understand the academic job search process
4. Learn to develop and evaluate MIS research theories, design, and methods
5. Learn to critically evaluate MIS research articles

B. What course or courses, if any, will this course replace? Implementation of this course, if it does not replace an existing course, may cause enrollment reductions in other courses. Please list all courses in which such enrollment declines may be expected.

This is a new course.

C. What is the justification for proposing the course at this time?

This course is a part of the curriculum for the proposed MIS PhD program. The course will be offered in the Fall terms.

D. Name the current faculty who are qualified to teach this course. What specific qualifications and capabilities must an individual have in order to teach this course?

Any tenure-track MIS faculty member in the ISM Department of the Culverhouse College of Business

E. This course is designed for the following curricula (programs):

MIS PhD curriculum

F. This course will be required for the following majors and minors:

MIS PhD students

G. Attach an outline of the course of at least one page in length and name any textbooks or principal readings that will be used. (This request is not intended to bind future instructors to a detailed program, but only to establish the general scope, nature and level of the course.)

See next page.

MIS 612 Professional Development III

Course Description

Provides doctoral students with an introduction to the Management Information Systems (MIS) academic community.

Course Prerequisites and co-requisites

None

Learning Objectives:

Upon successful completion of this course, students will be able to:

1. Better understand the research process and the field of Management Information Systems in general
2. Reflect on their own teaching in order to improve it
3. Understand the academic job search process
4. Learn to develop and evaluate MIS research theories, design, and methods
5. Learn to critically evaluate MIS research articles

Required Texts

None

PART TWO

(To be completed by the department head, alone or in consultation with the proposer.)

I. **BUDGETARY INFORMATION**

A. Anticipated frequency of offering:

__1__ section(s) each fall semester _____ section(s) each spring semester

_____ section(s) during summer school _____ according to demand

B. Estimated total enrollment:

First Year: 2

Second Year: 2

Third Year 2

C. Estimated capacity per section:

Lecture: 5

Discussion 5

Laboratory 5

D. How does this course impact on the mission of the College and department?

This course supports the development of MIS doctoral students, and hence the research efforts of the MIS faculty whose research interests are generally in the areas of cybersecurity, data analytics, and healthcare analytics.

E. What resources will be needed to teach this course and where will they come from?

With the addition of four faculty in the past two years, and another three faculty in 2017-2018, the MIS faculty will have sufficient resources to support this course.

F. Is there agreement within the department that the course is needed and that resources will be available to teach this course?

Yes.

G. Is there any indication that this course duplicates course work offered elsewhere in the College or University?

No.

II. EVALUATION

Describe the system of evaluation that will be used to determine whether this course should be continued in the departmental program. (It would be helpful to relate this system of evaluation to the kinds of information, requested in PART ONE, Section II-Academic Information and PART TWO, Section I-Budgetary Information).

- The course will be needed as long as the MIS PhD program is offered.

Proposed by: Allen Johnston — 03/27/18
Name — Date

Approved by: John Mittenthal — 3/28/18
Department Head/Director — Date

Dean — Date

Conditions of approval, if any:

Upon final approval, a course inventory form must be completed and forwarded to the Office for Academic Affairs.

PROPOSAL TO OFFER A NEW COURSE

COLLEGE OF COMMERCE AND BUSINESS ADMINISTRATION
THE UNIVERSITY OF ALABAMA

Department: ISM

Date: 2/22/2018

Course Number: MIS 613

Course Title: Professional Development IV

Effective Date: August 1, 2020

PART ONE

(To be completed by the individual proposing the course.)

I. GENERAL INFORMATION

A. Description (25 words or less):

Provides doctoral students with an introduction to the Management Information Systems (MIS) academic community.

B. 1. Prerequisite(s): None

2. Corequisite(s): None

3. Other: _____

C. Course Level: Graduate II
(Lower Division Undergraduate, Upper Division Undergraduate, Graduate I or Graduate II)

D. Format: 1 Hours of lecture per week

_____ Hours of discussion (recitation per week)

_____ Hours of laboratory (or field work) per week

Other instructional methods and modes: _____

_____

_____

E. Credit Hours: 1

II. ACADEMIC INFORMATION

A. Course Objectives:

Upon successful completion of this course, students will be able to:

1. Better understand the research process and the field of Management Information Systems in general
2. Reflect on their own teaching in order to improve it
3. Understand the academic job search process
4. Learn to develop and evaluate MIS research theories, design, and methods
5. Learn to critically evaluate MIS research articles

B. What course or courses, if any, will this course replace? Implementation of this course, if it does not replace an existing course, may cause enrollment reductions in other courses. Please list all courses in which such enrollment declines may be expected.

This is a new course.

C. What is the justification for proposing the course at this time?

This course is a part of the curriculum for the proposed MIS PhD program. The course will be offered in the Spring terms.

D. Name the current faculty who are qualified to teach this course. What specific qualifications and capabilities must an individual have in order to teach this course?

Any tenure-track MIS faculty member in the ISM Department of the Culverhouse College of Business

E. This course is designed for the following curricula (programs):

MIS PhD curriculum

F. This course will be required for the following majors and minors:

MIS PhD students

G. Attach an outline of the course of at least one page in length and name any textbooks or principal readings that will be used. (This request is not intended to bind future instructors to a detailed program, but only to establish the general scope, nature and level of the course.)

See next page.

MIS 613 Professional Development IV

Course Description
Provides doctoral students with an introduction to the Management Information Systems (MIS) academic community.

Course Prerequisites and co-requisites
None

Learning Objectives:
Upon successful completion of this course, students will be able to:

1. Better understand the research process and the field of Management Information Systems in general
2. Reflect on their own teaching in order to improve it
3. Understand the academic job search process
4. Learn to develop and evaluate MIS research theories, design, and methods
5. Learn to critically evaluate MIS research articles

Required Texts
None

PART TWO

(To be completed by the department head, alone or in consultation with the proposer.)

I. BUDGETARY INFORMATION

A. Anticipated frequency of offering:

_____ section(s) each fall semester __1__ section(s) each spring semester

_____ section(s) during summer school _____ according to demand

B. Estimated total enrollment:

First Year: __2__

Second Year: __2__

Third Year __2__

C. Estimated capacity per section:

Lecture: __5__

Discussion __5__

Laboratory __5__

D. How does this course impact on the mission of the College and department?

This course supports the development of MIS doctoral students, and hence the research efforts of the MIS faculty whose research interests are generally in the areas of cybersecurity, data analytics, and healthcare analytics.

E. What resources will be needed to teach this course and where will they come from?

With the addition of four faculty in the past two years, and another three faculty in 2017-2018, the MIS faculty will have sufficient resources to support this course.

F. Is there agreement within the department that the course is needed and that resources will be available to teach this course?

Yes.

G. Is there any indication that this course duplicates course work offered elsewhere in the College or University?

No.

II. EVALUATION

Describe the system of evaluation that will be used to determine whether this course should be continued in the departmental program. (It would be helpful to relate this system of evaluation to the kinds of information, requested in PART ONE, Section II-Academic Information and PART TWO, Section I-Budgetary Information).

- The course will be needed as long as the MIS PhD program is offered.

Proposed by: Allen Johnston — 03/27/18
Name — Date

Approved by: John Mitchell — 3/28/18
Department Head/Director — Date

Dean — Date

Conditions of approval, if any:

Upon final approval, a course inventory form must be completed and forwarded to the Office for Academic Affairs.

PROPOSAL TO OFFER A NEW COURSE

COLLEGE OF COMMERCE AND BUSINESS ADMINISTRATION
THE UNIVERSITY OF ALABAMA

Department: ISM

Date: 3/15/2018

Course Number: MIS 690

Course Title: MIS Research Methods Seminar

Effective Date: August 1, 2020

PART ONE

(To be completed by the individual proposing the course.)

I. GENERAL INFORMATION

A. Description (25 words or less):

A discussion of the basis and principles of systems modeling and the methods of social science research.

B. 1. Prerequisite(s): None

2. Corequisite(s): None

3. Other: _____

C. Course Level: Graduate II
(Lower Division Undergraduate, Upper Division Undergraduate, Graduate I or Graduate II)

D. Format: 3 ____ Hours of lecture per week

_____ Hours of discussion (recitation per week)

_____ Hours of laboratory (or field work) per week

Other instructional methods and modes: _____

_____

_____

E. Credit Hours: 3

II. ACADEMIC INFORMATION

A. Course Objectives:

This doctoral research seminar will provide students with a strong foundation in the methodological knowledge required to conduct rigorous research projects that lead to manuscripts suitable for publication in leading journals. Upon completion of this course, students will be able to:

1. discuss scientific research in general, and the principles, methods, and practices of social science research at how it applies to MIS research, in particular
2. critically review research publications from the leading MIS journals, particularly the research methods employed within
3. conceive research projects, including relevant research questions, theories, and appropriate research methods

B. What course or courses, if any, will this course replace? Implementation of this course, if it does not replace an existing course, may cause enrollment reductions in other courses. Please list all courses in which such enrollment declines may be expected.

This is a new course.

C. What is the justification for proposing the course at this time?

This course is a part of the curriculum for the proposed MIS PhD program. The course will be offered in the Spring terms.

D. Name the current faculty who are qualified to teach this course. What specific qualifications and capabilities must an individual have in order to teach this course?

Any tenure-track MIS faculty member in the ISM Department of the Culverhouse College of Business

E. This course is designed for the following curricula (programs):

MIS PhD curriculum

F. This course will be required for the following majors and minors:

MIS PhD students

G. Attach an outline of the course of at least one page in length and name any textbooks or principal readings that will be used. (This request is not intended to bind future instructors to a detailed program, but only to establish the general scope, nature and level of the course.)
Please refer to the attached document.

MIS 690 MIS Research Methods Seminar

Course Description

This seminar is a discussion of the basis and principles of systems modeling and the methods of social science research. The seminar also nurtures the motivation to become a contributor to the organizational sciences and information systems research communities by examining research processes, methodologies, and strategies, the information systems research context, concepts, theories, the application of systems modeling, and the nature of MIS research.

Course Prerequisites and co-requisites

None

Learning Objectives:

This doctoral research seminar will provide students with a strong foundation in the methodological knowledge required to conduct rigorous research projects that lead to manuscripts suitable for publication in leading journals. Upon completion of this course, students will be able to:

- discuss scientific research in general, and the principles, methods, and practices of social science research at how it applies to MIS research, in particular
- critically review research publications from the leading MIS journals, particularly the research methods employed within
- conceive research projects, including relevant research questions, theories, and appropriate research methods

Required Texts

None

PART TWO

(To be completed by the department head, alone or in consultation with the proposer.)

I. **BUDGETARY INFORMATION**

A. Anticipated frequency of offering:

_____ section(s) each fall semester __1__ section(s) each spring semester

_____ section(s) during summer school _____ according to demand

B. Estimated total enrollment:

First Year: __2__

Second Year: __2__

Third Year __2__

C. Estimated capacity per section:

Lecture: __2__

Discussion _____

Laboratory _____

D. How does this course impact on the mission of the College and department?

This course supports the development of MIS doctoral students, and hence the research efforts of the MIS faculty whose research interests are generally in the areas of cybersecurity, data analytics, and healthcare analytics.

E. What resources will be needed to teach this course and where will they come from?

With the addition of four faculty in the past two years, and another three faculty in 2017-2018, the MIS faculty will have sufficient resources to support this course.

F. Is there agreement within the department that the course is needed and that resources will be available to teach this course?

Yes.

G. Is there any indication that this course duplicates course work offered elsewhere in the College or University?

No, since the focus is on MIS related research.

II. EVALUATION

Describe the system of evaluation that will be used to determine whether this course should be continued in the departmental program. (It would be helpful to relate this system of evaluation to the kinds of information, requested in PART ONE, Section II-Academic Information and PART TWO, Section I-Budgetary Information).

The course is a required component of the doctoral program in MIS. It will be in place while the program exists or until the program is altered.

Proposed by:	Allen Johnston	03/27/18
	Name	Date
Approved by:	John Mittenthal	3/28/18
	Department Head/Director	Date
	Dean	Date

Conditions of approval, if any:

Upon final approval, a course inventory form must be completed and forwarded to the Office for Academic Affairs.

THE UNIVERSITY OF ALABAMA | Culverhouse
College of Commerce
Information Systems, Statistics and Management Science

March 27, 2018

MEMORANDUM

TO: Dr. Edward Schnee
FROM: Dr. John Mittenthal
Department Head

The ISM Department proposes a new Doctor of Philosophy degree program in Management Information Systems (MIS). Details of this proposal are provided in an accompanying document (MIS PhD Proposal). As part of the proposed MIS PhD program, the ISM Department proposes three actions be taken to support this proposal. These three actions are as follows:

Action 1: Approve MIS 610, 611, 612, and 613
Action 2: Approve MIS 690; and
Action 3: Rename a set of three existing MIS 600-level courses.

We would like to have these actions presented at the next FEB meeting, thus moving forward with the approval process.

Action 1. Approval of MIS 610, 611, 612, and 613 Professional Development I, II, III, and IV, respectively. This seminar provides doctoral students with an introduction to the Management Information Systems (MIS) academic community. Each course is a one credit hour course and will be team taught by the MIS graduate faculty.

Action 2. Approval of MIS 690 MIS Research Methods Seminar. This seminar is a discussion of the basis and principles of systems modeling and the methods of social science research. The seminar also nurtures the motivation to become a contributor to the organizational sciences and information systems research communities by examining research processes, methodologies, and strategies, the information systems research context, concepts, theories, the application of systems modeling, and the nature of MIS research. This is a three credit hour course to be taught by members of the MIS graduate faculty.

Action 3. We also propose the following three existing course name changes:

MIS 670, from MIS Research Seminar I to MIS Behavioral and Organizational Theory and Design Research Seminar. This seminar is a discussion of the different theories and views about organizations, their human agents, and the design and security of information and communication

systems with which they engage. Students gain an appreciation for the close and intertwining nature of the relationships between views of organizations, human cognition, and the philosophies governing the design, use, and security of information systems.

MIS 680, from MIS Research Seminar II to MIS Decision Processes and Structures Research Seminar. This seminar is a study of the structures and processes of decision-making at the individual, group, and organizational levels. Students also gain an appreciation for the impact of both evolutionary and revolutionary information technologies on these decision-making structures and processes.

MIS 685, from MIS Research Seminar III to MIS Research Design Seminar. This course is an examination of the process of designing and conducting research projects on information systems phenomena. Students will gain an appreciation for the challenges and issues associated with the application of different research methodologies to MIS phenomena.

These proposed changes are needed to update the content of the courses to be consistent with the proposed MIS PhD program.

Doctor of Philosophy Degree in Management Information Systems (MIS) Proposal

February 22, 2018

I. Background

An *ad hoc* committee of three faculty members from the Department of Information Systems, Statistics, and Management Science has been charged with developing a proposal for a Doctor of Philosophy Degree (PhD) in Management Information Systems (MIS) to be offered by the Culverhouse College of Business. The committee members are:

- Allen C. Johnston (MIS) – Associate Professor, Committee Chair
- Uzma Raja (MIS) – Professor
- Greg Bott (MIS) – Assistant Professor

The *ad hoc* committee has:

- Reviewed the content and structure of existing MIS graduate programs, including the MIS PhD concentration in the OM program
- Reviewed comparable programs at peer and aspirant institutions
- Compared the results of the reviews with existing MIS 600-level courses and 600-level courses of complementary programs to devise a new proposed MIS PhD program

The proposed MIS PhD program is the outcome of these efforts.

II. Program Objectives

The objective of the MIS PhD program is to prepare aspiring scholars to compete for faculty positions at leading academic institutions and to become productive scholars in the discipline. This program also provides prospective students with opportunities to develop the teaching skills needed to become excellent teachers.

Students who successfully complete this program will be able to:

- Demonstrate substantive knowledge related to the body of literature and theories within MIS.
- Appraise and synthesize models and theories from previously conducted research to discover new opportunities for research trajectories that will influence MIS research and practice.
- Design and conduct ethical and culturally competent research that is theoretically, methodologically, and analytically sound, thereby positively influencing the MIS discipline.
- Generate new knowledge that contributes to MIS research.
- Translate research findings into practice through active dissemination at national and international venues and in respected peer-reviewed journals.

The overall objectives of the proposed program are fully in line with the stated goals and objectives of the Culverhouse College of Business to build an effective curriculum framework for graduate programs that ensures delivery of innovative, high-quality learning experiences that equip our students for market-driven opportunities.

III. Justification

The PhD in Management Information Systems (MIS) is a common graduate program offered by prestigious business schools. Further, there is a tremendous demand for faculty in MIS, specifically within the sub-disciplines of cybersecurity and health information technology, two areas of particular expertise within the current MIS faculty. Based on the AACSB data, the Southern University Group (SUG) schools have an anticipated demand of 13 positions next year and 15 anticipated retirements. These are some of the highest demand numbers among all business disciplines. In the U.S. the net planned growth in the number of full-time doctoral positions for AY 2018-2019 is 66, representing the third highest rate of growth among business disciplines, behind only Accounting and Finance. Among Southeastern Conference (SEC) schools, that number is six, which is tied with Finance for the highest rate of expected growth.

Also, there has been an increased need for MIS doctorate holders in recent years due to an increase in available jobs at all levels and the growth in programs across the world. New initiatives (e.g., Data Science, Cybersecurity, and Healthcare Analytics) have driven the need for qualified faculty. The southeast region, in particular, has an increased need to attract qualified faculty, yet there are few doctoral degree awarding programs in the region.

In the state of Alabama, currently, there is an Information Systems concentration available for PhD students in Business at Auburn University and a DBA degree available at the University of South Alabama. However, the proposed MIS PhD program is more closely aligned with behavioral research training and mentoring than those other programs. Outside of those two programs, no other universities in the state of Alabama offer a doctorate-level degree program in MIS.

IV. Target Student

The target population of students for the proposed MIS PhD program are graduates of regionally accredited colleges or universities, particularly minorities and persons from underrepresented groups, with the MIS discipline. As part of this effort, we plan on extending our presence in the PhD Project, sponsored by KPMG, to identify suitable minority applicants for the program. We also plan on identifying outstanding students within the MBA program at the University of Alabama (UA), as well as those that participate in the honors, emerging scholars, and Culverhouse faculty scholars' programs.

The MIS program at UA has recently hired renowned scholars in the field, and we plan on leveraging their national and international networks within the Association for Information Systems (AIS) to identify and recruit qualified students.

We will assess student demand for the MIS PhD program directly by surveying the AACSB and AIS institutions and by collecting data on recent changes in the number of existing MIS PhD programs and the placement outcomes of these programs.

V. Proposed Program

A. Length

PhD programs in MIS offered by other U.S. universities are generally full-time programs that require four to five years of study to complete, which is consistent with other PhD programs offered through the Culverhouse College of Business. The proposed MIS PhD program consists of 73 credit hours. The program is designed for full-time students and will require four years to complete. The maximum length of the program is no more than 10 years. Students who fail to complete all the requirements within this time frame will be automatically removed from the program.

B. Program Size

There are currently three students in the MIS concentration of the OM PhD program. We anticipate no more than eight students in the program at any one time. This number will fluctuate as warranted by supply of qualified applicants, industry demand for the program's graduates, and available resources.

C. Format

The proposed MIS PhD program can be grouped into five areas of instruction: a required, repeating MIS PhD Professional Development Series course, four required MIS PhD Seminar Series courses, two required Research Methods Series courses offered in Management, and nine electives drawn from a set of vetted Research Design and Research Methods courses offered in Psychology, Computer Information Science, Marketing, and Educational Research. In addition, the program requires 24 dissertation hours.

Students will be required to pass a research qualifier after their first-year, as well as submit a first-year research paper to a peer-reviewed track at a qualified conference. After the second year, students must pass both a written and oral comprehensive examination and submit a second-year research paper to a peer-reviewed journal approved by MIS PhD Program Coordinator.

Upon successful completion of the comprehensive exam, students are expected to form their dissertation committee and identify a dissertation chair or co-chairs. The dissertation committee should be comprised of at least four academically qualified faculty members, while the dissertation chair must be a "full" member of the graduate council. In case of co-chairs, at least one member has to be a full member of the graduate council. Students are eligible to defend a proposal of their dissertation during or after their third year in the program. Upon successful defense of a dissertation proposal and submission of the approved candidacy forms to the office of graduate studies, a student will become a PhD candidate.

D. Curriculum

The curriculum of the proposed MS PhD program is provided in the following table.

MIS PhD Courses		Required	Elective
MIS PhD Professional Development Series *A series of courses designed to introduce PhD students to the MIS academic community, to refine their research projects, and to practice their research presentations.*			
MIS 610	Professional Development I (1 hour)	X	
MIS 611	Professional Development II (1 hour)	X	
MIS 612	Professional Development III (1 hour)	X	
MIS 613	Professional Development IV (1 hour)	X	
MIS PhD Seminar Series *A series of courses designed to introduce PhD students to MIS-specific theories, methods, and practices. These courses are designed to be rotated among the various MIS tenure-track faculty to provide the broadest range of exposure of MIS research principles, methods, and practices to the students as possible.*			
MIS 670	MIS Behavioral and Organizational Theory and Design Research Seminar (3 hour)	X	
MIS 680	MIS Decision Processes and Structures Research Seminar (3 hour)	X	
MIS 685	MIS Research Design Seminar (3 hour)	X	
MIS 690	MIS Research Methods Seminar (3 hour)	X	
Research Design Series *A series of courses designed to introduce PhD students to the basic and advanced research methods practiced in academic research.*			
CIS 608	Qualitative Research		X
MKT 613	Behavioral Theory and Qualitative Methodology		X
MKT 690	Philosophy of Science		X
BER 603	Survey Research in Educ		X
BER 645	Advanced Experimental Design		X
BER 665	Mixed Method Research Design		X
Research Methods Series *A series of courses designed to introduce PhD students to the basic and advanced statistical analysis tools and procedures practiced in academic research.*			
MGT 690	Research Methods I	X	
MGT 691	Research Methods II	X	

PY 602	Advanced Statistics I		X
PY 603	Advanced Statistics II		X
PY 604	Multivariate Methods of Analysis		X
MKT 674	Measurement and Structural Equation Modeling		X
BER 641	Multivariate Statistics		X
BER 642	Advanced Regression		X
BER 646	Structural Equation Modeling		X
Dissertation *Dissertation hours*			
MIS 699	Dissertation	X	

The plan of study for MIS PhD students is presented in the following tables.

	Year 1	**Credits**	**Year 2**	**Credits**
Fall	MIS 610	1	MIS 612	1
	MIS 670	3	MIS 685	3
	Research Design Series Elective	3	MGT 691	3
	Research Methods Series Elective	3	Research Methods Series Elective	3
Spring	MIS 611	1	MIS 613	1
	MIS 680	3	MIS 690	3
	MGT 690	3	Research Design Series Elective	3
	Research Methods Series Elective	3	Research Methods Series Elective	3
	Total Credit Hours after Year 1	**20**	**Total Credit Hours after Year 2**	**40**
Summer	Research Qualifier		Comprehensive Exam (Written and Oral)	
	First Year Research Paper (Conference)		Second Year Research Paper (Journal)	

	Year 3	**Credits**	**Year 4**	**Credits**
Fall	Research Design or Methods Series Elective	3	MIS 699	6
	Research Design or Methods Series Elective	3		
	MIS 699	6		
Spring	Research Design or Methods Series Elective	3	MIS 699	6
	MIS 699	6		
	Total Credit Hours after Year 3	**61**	**Total Credit Hours after Year 4**	**73**
Summer	Proposal Defense		Dissertation Defense	

E. Course Descriptions

MIS PhD Professional Development Series

MIS 610 Professional Development I (1 hour)

Provides doctoral students with an introduction to the Management Information Systems (MIS) academic community.

MIS 611 Professional Development II (1 hour)

Provides doctoral students with an introduction to the Management Information Systems (MIS) academic community.

MIS 612 Professional Development III (1 hour)

Provides doctoral students with an introduction to the Management Information Systems (MIS) academic community.

MIS 613 Professional Development IV (1 hour)

Provides doctoral students with an introduction to the Management Information Systems (MIS) academic community.

MIS PhD Seminar Series

MIS 670 MIS Behavioral and Organizational Theory and Design Research Seminar (3 hours)

This seminar is a discussion of the different theories and views about organizations, their human agents, and the design and security of information and communication systems with which they engage. Students gain an appreciation for the close and intertwining nature of the relationships between views of organizations, human cognition, and the philosophies governing the design, use, and security of information systems.

MIS 680 MIS Decision Processes and Structures Research Seminar (3 hours)

This seminar is a study of the structures and processes of decision-making at the individual, group, and organizational levels. Students also gain an appreciation for the impact of both evolutionary and revolutionary information technologies on these decision-making structures and processes.

MIS 685 MIS Research Design Seminar (3 hours)

This course is an examination of the process of designing and conducting research projects on information systems phenomena. Students will gain an appreciation for the challenges and issues associated with the application of different research methodologies to MIS phenomena.

MIS 690 MIS Research Methods Seminar (3 hours)

This seminar is a discussion of the basis and principles of systems modeling and the methods of social science research. The seminar also nurtures the motivation to become a contributor to the organizational sciences and information systems research communities by examining research

processes, methodologies, and strategies, the information systems research context, concepts, theories, the application of systems modeling, and the nature of MIS research.

Research Design Series

CIS 608 Qualitative Research (3 hours)

This course is an introduction to qualitative research methods in communication, yet with a doctoral level of sophistication and expectations. The aim is to introduce students to all primary forms of qualitative methodologies from a social science perspective; however, each method or approach described could easily be the subject of a course itself.

MKT 613 Behavioral Theory and Qualitative Methodology (3 hours)

This course focuses on the use of qualitative methodology as a way to ground theory, in combination with a focus on the application of consumer psychological and behavioral topics in such contexts as services, retailing, shopping, and relationship marketing.

MKT 690 Philosophy of Science (3 hours)

This course begins with an examination of theory and theory development. It then follows with a consideration of various methodological approaches, with a heavy focus on experimental design. Finally, throughout, substantive behavioral and marketing topics are considered in detail, including attitudes and persuasion, advertising and branding effects, judgment and decision making, and the role of affect and emotions.

BER 603 Survey Research in Educ (3 hours)

Comprehensive introduction to using survey instruments for research purposes. Survey development, construction, validation scaling, sampling, and research methods as they apply to matching the survey to research questions are covered.

BER 645 Advanced Experimental Design (3 hours)

Advanced statistical methods in Experimental Design, including specialty ANOVA designs and designing of experimental studies. Topics include Factorial ANOVA, Randomized Block Designs, Nested Designs, Random and Mixed Effects ANOVA, Repeated Measures ANOVA, and Incomplete Block Designs.

BER 665 Mixed Method Research Design (3 hours)

Course participants will be provided with an overview of the history and foundations of mixed methods research, literature on emerging trends in mixed methods research, types of MM designs, types of research problems addressed by MM research, data collection and analysis strategies, and reporting and evaluating mixed methods research.

Research Methods Series

MGT 690 Research Methods I (3 hours)

The purpose of this class is to build skills in the design, conduct and evaluation of research. Students are introduced to the basics of designing studies to test hypotheses and research.

MGT 691 Research Methods II (3 hours)

Research Methods II

PY 602 Advanced Statistics I (3 hours)

An applied course explaining how to use categorical predictor variables to explain continuous response variables. Covers t-tests, ANOVA, and nonparametric alternatives in between-, within-, and mixed-model designs.

PY 603 Advanced Statistics II (3 hours)

An applied course explaining how to use continuous predictor variables to explain continuous response variables. Covers correlation, regression, and general linear models including both categorical and continuous predictor variables.

PY 604 Multivariate Methods of Analysis (3 hours)

Multivariate analysis, with emphasis on MANOVA, discriminant analysis, canonical correlation, and the multivariate approach to repeated measures analyses.

MKT 674 Measurement and Structural Equation Modeling (3 hours)

A course that covers measurement theory and how it is applied in scientific research. Students learn to construct effective questionnaires, to develop psychometrically-sound measures of constructs, and to assess measure reliability and validity. Quantitative methods, including exploratory factor analysis, confirmatory factor analysis, and structural equation modeling, are emphasized.

BER 641 Multivariate Statistics (3 hours)

Covers the following statistical procedures: principal component analysis, factor analysis, cluster analysis, multidimensional scaling, discriminate analysis, canonical correlation, and hierarchical linear modeling (HLM) and other interdependent multivariate methods.

BER 642 Advanced Regression (3 hours)

Different multiple regression methods are presented including an overview of ordinary least squares regression, ordinal regression, logistic and probit regression, log linear, mixed, and regression discontinuity. Interpretation of results diagnostics and applications are covered for the several GLM models.

BER 646 Structural Equation Modeling (3 hours)

Includes an introduction to the basic concepts of structural equational modeling, including approaches to regression, path analysis, confirmatory factor analysis, and model building with dependent and independent variables.

VI. Resources

The proposed MIS PhD program will require a budget to cover the following:

- Program Coordinator
- Instructors to cover the MIS PhD course offerings
- Student Recruiting Efforts

Note that:

During the 2015-16 and 2016-17 academic years the ISM Department added four new faculty members (three at the Assistant Professor level and one at the Associate Professor level) in MIS. A 2017-18 search has resulted in one Professor, and one Assistant Professor hire to date, with the potential for another Professor or Associate Professor hire. These recent and anticipated hires will provide the capacity necessary to meet the needs of the proposed MIS PhD program.

VII. Computers and Software Considerations

There are no requirements for computer hardware or software for this program. Rather, students will be able to use their personal devices, and/or University and College provisioned hardware and software applications for all courses.

VIII. Potential Impact on Existing Courses

The courses comprising the proposed MIS PhD program do not impact existing courses in MIS, ISM, or elsewhere in Culverhouse or UA.

IX. Timeline

The tentative timeline for establishing the MIS PhD program and offering the degree program for the first time follows:

- August 2017 – February 2017: Design the curriculum and work with Culverhouse administration to determine the resources that will be required to establish and run the program
- March 2018 – May 2018: Present the proposed program to Culverhouse committees and faculty, gather feedback, and address concerns
- July 2018 – Dec 2019: Submit proposal for review/approval process
- July 2019 – Dec 2019: Promote the program externally to recruit students, generate funding, and raise awareness
- Jan 2020 – March 2020: Admit first MIS PhD cohort
- August 2020: Start of classes for MIS PhD program

X. Conclusion

With sufficient resources and administrative support, the ad hoc committee is confident the proposed MIS PhD program will quickly establish itself as one of the top MIS Doctoral programs in the U.S. and abroad.

ALABAMA COMMISSION ON HIGHER EDUCATION
INSTRUCTION

Proposal Form for the Addition of an Option, Track, Specialization, Concentration, etc., to an Existing Program

1. Institution: The University of Alabama

2. CIP Code, Program Title, and Degree Nomenclature of the existing program [see instructions below]:

   CIP Code: 52.1401
   Program: Marketing
   Degree Nomenclature: M.S.

3. Name of the proposed extension:

   Professional Sales Concentration

4. Fill in the table provided with the following information:

Semester Hours in the General Education Curriculum (Certificate, Associate, and Baccalaureate Programs Only)	NA
Semester Hours in the Program Core	21
Semester Hours in the Option, Concentration, etc.	9
Total Semester Hours in the Program with the Proposed Extension/Alteration	30

5. List the courses in the program core with the number of semester hours for each:

MKT 530 Advanced Marketing Analysis	3 credit hours
IBA 555 Global Market Management	3 credit hours
MKT 595 Capstone Project in Marketing A	3 credit hours
MKT 596 Capstone Project in Marketing B	3 credit hours

6. List the courses in the proposed option, concentration, specialization, or track, etc., with the credit hours for each:

   Required:

MKT 537 Personal Selling	3 credit hours
MKT 538 Sales Management	3 credit hours
MKT 539 Key Account Management	3 credit hours

   Three optional marketing courses from the following:

MKT 510 Product Development	3 credit hours
MKT 522 Supply Chain Management	3 credit hours

MKT 531 Services Marketing	3 credit hours
MKT 540 Digital and Social Media Marketing	3 credit hours
MKT 542 Digital and Social Media Marketing Analytics	3 credit hours
MKT 543 Advanced Digital and Social Media Marketing	3 credit hours
MKT 592 Internship	3 credit hours

Other Marketing Courses will be considered on an individual basis (600 – level, 400 – level for graduate credit).

7. What is the scope or effect of the proposed extension?

    a. How many of the major courses to be offered by the proposed extension are offered in the existing program?

        MKT 537, MKT 538, and MKT 539 will be available as Master of Science in Marketing courses. Marketing 537, 538, and 539 may be taken by students who had Marketing 337, 438, and 439 as undergraduates.

    b. How will the proposed extension impact other public institutions?

        Negligible

    c. Will the proposed extension move the program listing to a new two-digit CIP category in the Commission's academic program inventory?

        No

8. What is the impact of the proposed change on the existing program or unit?

    a. What will be the budgetary impact of the proposed extension?

        None

    b. What changes in faculty and staff will be required to implement the proposed extension/alteration?

        None

9. If the extension will require additional resources, please provide a list of sources of funds available for the extension.

    N/A

10. Please state the rationale for the extension/alteration.

A Master of Marketing in Professional Sales will expose students to elevated subject matter, allow them to meet increased market expectations, and accelerate their career progression:

Subject Matter Elevation
A graduate degree concentrated in Professional Sales will allow students to become subject matter experts through the teaching of elevated sales topics. There has been a proliferation of undergraduate sales programs across the country and a similar growth is expected to occur at the graduate level. The same trends that have made programs popular nationwide will cause for growth at the master's level.

With such a proliferation, sales content has also now elevated to include master level topics like strategic account management, customer experience, and technical sales, among others. These topics cannot be covered at the undergraduate level, as that is purposed to teach the fundamental selling skills required to unlock the advanced topics.

Market Expectations
A graduate degree in Professional Sales will allow students to gain access to jobs for which they could not qualify with only an undergraduate degree. The technological, global, and industrial markets have increased the expectations of knowledge and experience required for advanced roles.

Students with a master's degree in Professional Sales can apply for jobs that place them in a sales management or sales leadership role directly following graduation. The skills gained through graduate courses can replace the work experience typically required for jobs of this level.

Career Acceleration
A graduate degree in Sales will allow students to gain exposure to an accelerated career path. Large sales organizations (i.e. AT&T, Stryker, PepsiCo, Hewlett Packard Enterprise) are valuing a master's degree as a career accelerant. Employees with a graduate degree can move laterally and vertically in an organization more quickly and can be exposed to more growth opportunities in sales.

Regardless of where students begin their careers, a Master of Marketing concentrated in Professional Sales will speed up their development. Students will start their careers with an advantage and will have the ability and skills necessary to progress quicker than those with solely an undergraduate background.

Signature of Institution's Authorized Representative Date

Title

Institution

THE UNIVERSITY OF ALABAMA | Culverhouse College of Commerce
Information Systems, Statistics and Management Science

December 6, 2017

MEMORANDUM

TO: Dr. Edward Schnee

FROM: Dr. John Mittenthal
Department Head

The ISM Department proposes a new Master of Science in Management Information Systems (MIS). Details of this proposal are provided in an accompanying document (MSMIS Proposal). As part of the proposed MS in MIS program, the ISM Department proposes five actions be taken to support this proposal, and coordinate with the MIS undergraduate program. These five actions are as follows:
Action 1: Approve MIS 564, and a related slash-listed course MIS 464;
Action 2: Approve MIS 566, and a related slash-listed course MIS 466;
Action 3: Approve MIS 460;
Action 4: Approve MIS 462; and
Action 5: Rename a set of five existing MIS 500-level courses.
Actions 1, 2, and 5 are requested for the MS in MIS program, and the new undergraduate courses proposed in Actions 1, 2, 3, and 4 are requested to enhance the MIS major with a set of courses focused on cybersecurity issues and topics. We would like to have these actions presented at the next FEB meeting, thus moving forward with the approval process so that they can be added to the course catalog.

A final action, the renaming of the MIS-related MBA concentration, is requested in Action 6.

Action 1. MIS 464 and MIS 564 Organizational Security Management [slash-listed]
This course is intended to teach students how to develop and apply an information security management plan to an organization. Topics include governance and security policy, threat and vulnerability management, incident management, risk management, information leakage, crisis management and business continuity, compliance management, and security awareness and security implementation considerations. Students will also learn about the national and international policy and legal considerations related to cybersecurity and cyberspace such as privacy, intellectual property, and cybercrime.

Action 2. MIS 466 and MIS 566 Introduction to Cybercrime and Digital Forensics [slash-listed]
This course introduces the topics of cybercrime and digital forensics. Students will learn different aspects of cybercrime and methods to uncover, protect and analyze digital evidence. They will learn about different types of software and hardware tools and use them to perform rudimentary investigations. Cybercrime and digital forensics are increasingly important areas of study. Tools are becoming more powerful and attacks more sophisticated. Consequently, there is a growing need for graduates with the skills to investigate these crimes.

Action 3. MIS 460 Applied Cyber Security
This course examines management issues and practical implications related to securing information systems. This course focuses on the Threat Environment, security Policy and Planning, Cryptography, Secure Networks, Access Control, Firewalls, Host Hardening, Application Security, Data Protection, Incident Response, and Networking and Review of TCP/IP. A clear theoretical understanding supports a large practical component where students learn to use contemporary security software to secure and assess information systems and network infrastructure using a hands-on approach.

Action 4. MIS 462 Behavioral Cyber Security
This course is intended to provide students with a solid foundation of information security management, with an emphasis on its human element. As part of this understanding, we will explore how humans, as employees of an organization and consumers of organizational products and services, perceive threats to themselves, their digital assets, their privacy, and to their organizational affiliations. We also explore how these perceptions are operationalized in their behaviors as organizational insiders, serving to either undermine or facilitate security management practices.

Action 5. We also propose the following five existing course name changes:

MIS 514, from Information Tech Bootcamp to Intro to Programming
MIS 530, from Sys Development/Implementation to Health IT
MIS 540, from Dbase Design/Construction/Oper to Advanced Database Management Systems
MIS 560, from Enterprise Integration Methods to Applied Cyber Security
MIS 562, from Enterprise Integration Development to Behavioral Cyber Security

These proposed changes are needed to update the content of the courses to be consistent with the proposed MS in MIS program.

Action 6. We would also like to propose a name change for the Enterprise Consulting concentration in the MBA program to Management Information Systems.

Master of Science Degree in Management Information Systems (MSMIS) Proposal

February 18, 2018

I. Background

An *ad hoc* committee of three faculty members from the Department of information Systems, Statistics, and Management Science has been charged with developing a proposal for a Master of Science Degree in Management Information Systems (MSMIS) to be offered by the Culverhouse College of Business. The committee members are:

- Allen C. Johnston (MIS) – Committee Chair
- Uzma Raja (MIS) – Coordinator, Ph.D. Program in Management Information Systems
- Greg Bott (MIS) – Assistant Professor

The *ad hoc* committee has:

- Reviewed the content and structure of existing MIS graduate programs, including the MIS concentration in the MBA program
- Reviewed comparable programs at peer and aspirant institutions
- Compared the results of the reviews with existing MIS 500-level courses and 500-level courses of complementary programs to devise a new proposed MSMIS program

The proposed MSMIS program is the outcome of these efforts.

II. Program Objectives

The objective of the MSMIS program is to help our students advance in their careers by improving understanding about how to use the latest information technologies to benefit organizational stakeholders, such as managers, organizations, employees, customers and partners. In this era of rapidly evolving technology, the Management of Information Systems (MIS) field is growing at an exponential rate as organizations struggle to stay current with new emerging technologies, such as mobile applications, blockchain, and the Internet of Things (IoT). Professionals are needed that can help organizations understand the business potential of these new technologies, how to develop new applications to meet changing market dynamics, and how to secure these systems from threats. Students graduating from our program will be prepared to succeed in an exciting and dynamic career field combining a solid technical foundation with business and managerial skills so they can immediately contribute to solving business problems, and can drill down into specific fields, such as IT strategy/management, cyber security, or health IT.

This program provides the expanded perspective needed to advance in the Management of Information Systems field, and allows students to tailor their education based on specific career goals by focusing in one of two areas: cyber security and health IT. The curriculum supplements traditional management information systems coursework that many receive in undergraduate programs by focusing on higher-level learning objectives and outcomes relevant in today's rapidly changing business environment. Our emphasis is on the managerial aspects of information systems, and the goals of our

program are to help those currently working or aspiring to work in IS related fields position themselves for managerial positions, and to prepare individuals from other fields build the skills needed to succeed in IS careers.

Students who successfully complete this program will be able to:

- Demonstrate how information technology links and enables achieving business goals in functional business units;
- Provide mid to upper-level working professionals opportunities to develop the skills that will set them apart and place them on an accelerated career trajectory;
- Use critical thinking skills to analyze business problems;
- Apply appropriate analytical tools and methods to develop solutions to complex and unfamiliar business problems;
- Synthesize the impact of globalization on business information systems development; and
- Demonstrate ability to manage others and work in teams

The overall objectives of the proposed program are fully in line with the stated goals and objectives of the Culverhouse College of Business to build an effective curriculum framework for graduate programs that ensures delivery of innovative, high-quality learning experiences that equip our students for market-driven opportunities.

III. Justification

The Master of Science in Management Information Systems (MSMIS) is a common graduate program offered by prestigious business schools. There are currently MSMIS programs offered at the University of Alabama at Birmingham, the University of Alabama at Huntsville, and Auburn, but the nationwide demand for graduates of MSMIS programs far exceeds the number of students graduating from these programs. According to the projections from the United States Bureau of Labor Statistics (US-BLS), the following are the projected growth demands in the areas of computer and information systems in the state of Alabama over the next 10 years:

Occupation Name	Base Year	Base	Proj Year	Proj	Change	% Change	Avg Annual Openings
Software Developers, Applications	2014	4,910	2024	5,860	950	19	170
Software Developers, Systems Software	2014	4,330	2024	5,190	860	20	150
Computer and Information Research Scientists	2014	230	2024	270	40	14	10
Computer and Information Systems Managers	2014	3,490	2024	4,150	660	19	110
Computer Systems Analysts	2014	4,390	2024	5,440	1,050	24	160

Computer User Support Specialists	2014	5,960	2024	7,080	1,120	19	190
Computer Network Support Specialists	2014	1,250	2024	1,380	130	10	30
		24,560		29,370	4,810		820

According to the projections from the US-BLS (http://www.projectionscentral.com/Projections/LongTerm), the following are the projected growth demands in the areas of computer and information systems in the United States over the next 10 years:

Occupation Name	Base Year	Base	Proj Year	Proj	Change	% Change	Avg Annual Openings
Software Developers, Applications	2014	718,400	2024	853,700	135,300	19	23,800
Software Developers, Systems Software	2014	395,600	2024	447,000	51,300	13	10,790
Computer and Information Research Scientists	2014	25,600	2024	28,300	2,700	11	600
Computer and Information Systems Managers	2014	348,500	2024	402,200	53,700	15	9,480
Computer Systems Analysts	2014	567,800	2024	686,300	118,600	21	19,160
Computer User Support Specialists	2014	585,900	2024	661,000	75,100	13	15,050
Computer Network Support Specialists	2014	181,000	2024	194,600	13,600	8	3,690
		2,822,800		3,273,100	450,300		82,570

We have also reviewed the Bureau of Labor Statistics workforce trends to compare projected job openings versus college graduates in the STEM areas. Given these trends, there is evidence to suggest that there will be high demand for graduate education in MIS, and that the University of Alabama could fill an important need in the region and the nation for the continuing education of IT professionals.

Further, the proposed UA program differs from the other state institutions' MSMIS programs in that it has a significant data analytics component to it, providing a strong data collection, management, and analysis component to the cyber security and health IT focal areas.

IV. Target Student

Students accepted into the program will have graduated with a baccalaureate degree in information systems, computer science, business analytics, or engineering from a regionally accredited college or university or from a recognized university abroad. If the degree is from a non IT-related field, admission is dependent upon the completion of two bridge courses that provide requisite knowledge needed for the MSMIS program in the areas of programming and systems analysis and design. Students accepted into the program will also have achieved a minimum overall undergraduate grade point average (GPA) of 3.0 on a 4.0 scale and will have earned a combined score of 580 or higher on the verbal and quantitative sections of the GMAT.

We will assess student demand for the MSMIS program directly by surveying our current students in the Culverhouse MBA and MS programs and by collecting data on recent changes in the number of existing MSMIS programs and the number of students enrolled in these programs.

V. Proposed Program

A. Length

Master's programs in MIS offered by other U.S. universities are generally full time programs that require twelve to fifteen months of study to complete, which is consistent with other Master's programs offered through the Culverhouse College of Business. The proposed MSMIS program consists of thirty credit hours. The program is designed for full time students and will require between twelve to fifteen months to complete. This timing is consistent with the Culverhouse College model for Master's programs and is competitive with Master's programs in MIS offered by other U.S. universities.

B. Program Size

A cohort of no more than thirty students will be admitted to the MSMIS program in the first year of the program. This number will be allowed to increase as warranted by supply of qualified applicants, industry demand for the program's graduates, and available resources.

C. Format

Academic programs in MIS offered by other U.S. universities generally comprise a combination of new and existing courses; in almost all instances this mix is predominantly made up of new courses. This approach offers stability to the program and to the College administering the program. The proposed MSMIS program follows this model, combining six new courses with an existing set of seven courses. The program consists of a core of six MIS courses and contains two focal areas of study, Cyber Security and Health IT - each focal area having four courses. Students will select only one focal area, or if agreed upon by the Program Coordinator, may take courses across both focal areas.

All courses will be offered on campus, with some online offerings made available where needed and agreed upon by the Program Coordinator, Department Chair, and instructor of record.

D. Curriculum

The curriculum of the proposed MSMIS program by semester is provided in the following table.

MSMIS Courses (6 core + 4 electives)		Core	Cyber Security	Health IT
MIS 511	Management Information Systems	X		
MIS 525	IS Project Management	X		
MIS 527	Emerging Information Technologies	X		
MIS 564	Organizational Security Management	X		
MIS 540	Dbase Design/Construction/Oper	X		
MIS 598	Research in MIS	X		
MIS 561	Applied Cyber Security		X	
MIS 563	Behavioral Cyber Security		X	
MIS 566	Introduction to Cybercrime and Digital Forensics		X	
MIS 541	Business Analytic Support Systems		X	X
MIS 531	Health IT			X
MIS xxx	(Health IT related, in development)			X
MIS xxx	(Health IT related, in development)			X

MSMIS Bridge Courses (summer online)		Credit Hours
MIS 515 Intro to Programming		3
MIS 520 System Analysis and Design		3

This proposed program will be taught by MIS faculty in the Department of Information Systems, Statistics, and Management Science. Of the courses proposed as part of this curriculum, all but six currently exist. The new courses will be taught by a combination of current faculty and new faculty being hired into the college over the next several years. The long term objective of this program is to evolve to allow for multiple elective focal areas beyond Cyber Security and Health IT.

E. Course Descriptions

MSMIS Core Courses

MIS 511 Management Information Systems (3 hours)

Motivation for, construction of, and application of MIS. Topics include IS strategic alignment, information intensive business processes, and decision making. Business analysis techniques are

emphasized for systems such as TPS, e-business, management reporting systems, and data warehouses.

MIS 525 IS Project Management (3 hours)

This course presents techniques and methodologies of project level scoping, staffing, planning, scheduling, monitoring, and controlling the development of value-added information technology business solutions on time and within budget.

MIS 527 Emerging Information Technologies (3 hours)

This course covers fundamental purchasing systems applications, supplier relations and evaluation, strategic planning in purchasing, purchasing techniques, value analysis and cost analysis.

MIS 564 Organization Security Management (3 hours)

The course is intended to teach students how to develop and apply an information security management plan to an organization.

MIS 540 Dbase Design/Construction/Oper (3 hours)

Emphasizes commercial business application of relational DBMS. Topics include semantic data modeling, normalization, process triggers, enterprise integrated, ODBC, n-tier architecture, e-business application, and performance tuning.

MIS 598 Research in MIS (3 hours)

Open to students nearing completion of coursework for the master's degree. A supervised study and investigation of specific problems in management and management information systems.

MSMIS Cyber Security Focal Area Courses

MIS 561 Applied Cyber Security (3 hours)

This course examines management issues and practical implications related to securing information systems.

MIS 563 Behavioral Cyber Security (3 hours)

This course focuses on the human element of information security, exploring employee perceptions of threats and effective approaches for motivating compliance with organizational security requirements.

MIS 566 Introduction to Cybercrime and Digital Forensics (3 hours)

This course introduces the topics of cybercrime and digital forensics. Students will learn different aspects of cybercrime and methods to uncover, protect and analyze digital evidence.

MIS 541 Business Analytic Support Systems (3 hours)

System level concepts, methods, tools and techniques for model-driven, data-intensive decision making. Topics include: structuring data, information and knowledge in data warehouses and data marts, and analytic procedures.

MSMIS Health IT Focal Area Courses

MIS 531 Health IT (3 hours)

This course provides an overview of the healthcare environment and the role of HIT in enabling service delivery capabilities.

VI. Resources

The proposed Culverhouse MSBA will require a budget to cover the following:

- Program Coordinator
- Instructors to cover
    - six core MSMIS courses (one new course and five existing courses)
    - seven focal area courses (six new courses and one existing course)
    - two bridge MSMIS courses (one new course and one existing course, both to be offered during the summer as needed)
- Student Recruiting Efforts
- Guest Speakers

Note that:

During the 2015-16 and 2016-17 academic years the ISM Department added four new faculty members (three at the Assistant Professor level and one at the Associate Professor level) in MIS. A 2017-18 search has resulted in one Professor and one Assistant Professor hire to date, with the potential for another Professor or Associate Professor hire. These recent and anticipated hires will provide the capacity necessary to meet the needs of the proposed MSMIS program.

VII. Computers and Software Considerations

There are no requirements for computer hardware or software for this program. Rather, students will be able to use their personal devices and University and College provisioned software applications for all but a couple of courses. For those courses, MIS 561 Applied Cyber Security and MIS 566 Introduction to Cybercrime and Digital Forensics, the instructor of record will specify the hardware and/or software requirements for the class.

VIII. Advisory Board

The existing MIS Forum, comprised of MIS/IT executives from a broad spectrum of industries will provide guidance and advice for refining and revising the program, as well as placing the program's graduates. Executives from our corporate partners who serve on the MIS Forum will ensure the MSMIS

curriculum remains relevant to the need of modern business and industry and that the program delivers the talent that modern business and industry are seeking.

A Cyber Security Advisory Group is also planned to provide support and guidance specific to the cyber security focal area. Another advisory group may be warranted for the Health IT area, but that will be determined at a later date.

IX. Potential Impact on Existing Courses

The courses comprising the proposed MSMIS program overlap with the MIS concentration in the MBA program in the following ways:

- MIS 511 and MIS 540 Dbase Design/Construction/Oper are common to the core of both programs.
- MIS 541 Business Analytic Support Systems, MIS 561 Applied Cyber Security, and MIS 563 Behavioral Cyber Security are common to the Cyber Security focal area of the MSMIS program and the core of the MIS concentration in the MBA program.
- MIS 525 IS Project Management, MIS 527 Emerging Information Technologies, and MIS 564 Organizational Security Management are common to the core of the MSMIS program and the concentration elective sets of the MIS concentration in the MBA program.
- MIS 566 Introduction to Cybercrime and Digital Forensics is common to the Cyber Security focal area of the MSMIS program and the concentration elective sets of the MIS concentration in the MBA program.

These existing MIS concentration in the MBA program is not intended to be a substitute for a graduate degree in MIS. There are likely some students in the MIS concentration in the MBA program who would prefer to pursue an MSMIS degree if given the opportunity, and we suspect this will be true of potential students in the future. This could result in a decline in the enrollment in the MIS concentration in the MBA program. In addition to recruiting students into the MSMIS program, the ISM Department recognizes the potential for this outcome and is committed to focus recruiting efforts on students who are interested in the depth of study provided by the MSMIS program rather than the breadth of the MIS concentration in the MBA program.

X. Timeline

The tentative timeline for establishing the MSMIS program and offering the degree program for the first time follows:

- August 2017 – November 2017: Design the curriculum and work with Culverhouse administration to establish the resources that will be required to establish and run the program
- December 2017 – April 2018: Present the proposed program to Culverhouse committees and faculty, gather feedback, and address concerns
- April 2018 – December 2018: Submit proposal for review/approval process
- July 2018 – Dec 2018: Promote the program externally to recruit students and raise awareness
- Plan for the offering of MSMIS courses in the 2019-20 academic year
- Jan 2019 – Feb 2019: Admit first MSMIS cohort
- June 2019: Offer first bridge courses (as needed)
- August 2019: Offer first core courses

ABSENCE FROM DUTY, MISSED CLASSES, AND REPORTING OF CONSULTING AND SUPPLEMENTAL COMPENSATION ACTIVITIES POLICY

Generally, all classes should meet at the scheduled time and be taught by the instructor assigned to the course. On occasion it may be necessary for a faculty member to miss a class. This policy summarizes and expands upon *The University of Alabama Faculty Handbook* requirements relating to missed classes and absence from duty. Because supplemental compensation and consulting activities are sometimes cited as reasons for absence from duty, this document also summarizes reporting requirements and establishes policies relating to missing and rescheduling classes for these purposes.

I. Missed Classes and Absence From Duty

A. The *UA Faculty Handbook* indicates that faculty are expected to conduct their classes as scheduled and seek approval prior to missing class (http://facultyhandbook.ua.edu/iii-class-scheduling-and-class-attendance.html)

B. Submission of a properly completed Coverage Approval Form to the Department Head/Director is the appropriate means for requesting prior approval to miss class or other duties. Except in unusual circumstances, the form should be submitted at least two weeks in advance. If the request is approved, a copy of the signed form will be returned to the faculty member in a timely manner.

C. Approval generally requires that the class be met at the scheduled time by a qualified substitute instructor or offered in another time or format.

D. In the event that an emergency causes a class to be missed, the faculty member should inform the department program assistant as soon as possible. The Coverage Approval Form should be submitted as soon as practical following the emergency.

II. Consulting and Supplemental Compensation

A. Because supplemental compensation activity may infringe upon a faculty member's teaching, research, and academic citizenship responsibilities, University policy requires prior approval from the Dean or the Dean's designated representative for any such activity. University policy limits the number of supplemental compensation days during any academic year and during the interim term and the summer term for faculty members with teaching assignments during these periods (http://facultyhandbook.ua.edu/vii-supplemental-compensation-policy.html).

B. It is the policy of the College that regularly scheduled classes take precedence over consulting and other activities, and that faculty should schedule these activities to avoid conflicts with regularly scheduled classes.

C. All internal supplemental compensation activities and any externally-compensated activities that exceed $100 or ½ day of time must be approved by the Department Head/Director and the Dean on the appropriate University supplemental compensation form prior to starting the activity. If the planned activity is expected to result in a missed

class or other assigned responsibility, the Coverage Approval Form also must be submitted and approved by the Department Head/Director.

D. Faculty who are not meeting academic qualifications criteria are not eligible for internal supplemental compensation. This includes overload teaching, EMBA programs, etc. Meeting academic qualifications criteria will also be a consideration in approvals of external supplementation compensation form.

E. Faculty members are strongly encouraged to consult the UA faculty handbook and Provost's website regarding the State of Alabama Ethics Law (http://provost.ua.edu/state-ethics-law.html) to ensure that their consulting or other external activities are not in violation of the policies or the law.

F. Temporary appointments at another university (such as short-term teaching assignments or research appointments) during the academic year must not conflict with the faculty member's regular UA duties. Compelling arguments should be made for these appointments and could, for example include; access to valuable and unique resources, such as data or special collaboration opportunities.

University policy requires that an academic appointment at any other institution of higher education requires written approval from the Executive Vice President/Provost. To request approval for an academic appointment at another institution, the faculty member should submit a request to his or her department head/director explaining why the appointment adds value to UA. If acceptable to the department head/director, he/she should submit the request to the Dean's office for approval and routing to the Office of Academic Affairs. The external supplemental compensation form is not an appropriate means to request academic appointments at another university.

Version History

1/12/18	Revised policy distributed to department heads to review.
2/14/18	Revised policy submitted to Faculty Executive Board for consideration
3/21/18	Revised policy (with additional changes) submitted to Faculty Executive Board for consideration