SIGNATURE ROUTING LOG

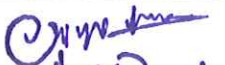## General Information:

Proposal Type: Course ☒   Program ☐   Other ☐

Proposal Name[1] (course prefix & number, pgm major & degree, etc.): __STA569.__ *(new, DL)*

Proposal Contact Person Name: __Arnold Stromberg__   Phone: __7-6115__   Email: __Stromberg@uky.edu__

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

Internal College Approvals and Course Cross-listing Approvals:

Reviewing Group	Date Approved	Contact Person (name/phone/email)	Signature
Department of Statistics,	02/10/09	Arnold Stromberg / 7-6115 / Stromberg@uky.edu	
DGS	10/15/10	Arne Bathke/ 7-6115 / arne@email.uky.edu	
Statistics, Chair	10/15/10	Arnold Stromberg / 7-6115 / Stromberg@uky.edu	
		/ /	
		/ /	
A&S Ed. Policy Cmte.	3/22/11	G. Murthy, Nat. Sci. / 7-4729 / ganpathy.murthy@uky.edu	
A&S Dean	3/22/11	Anna Bosch, Associate Dean / 7-6689 / bosch@uky.edu	Anna R. K. Bosch

External-to-College Approvals:

Council	Date Approved	Signature	Approval of Revision[2]
Undergraduate Council	3/29/2011		
Graduate Council			
Health Care Colleges Council			
Senate Council Approval		University Senate Approval	

Comments:

NEW COURSE FORM

1.	**General Information.**				
a.	Submitted by the College of:	Arts and Sciences		Today's Date:	10/3/2010
b.	Department/Division:	Statistics			
c.	Contact person name: Arnold Stromberg	Email: stromberg@uky.edu		Phone:	257-6115
d.	Requested Effective Date:	☒ Semester following approval	OR ☐ Specific Term/Year[1] :		_____

2.	**Designation and Description of Proposed Course.**
a.	Prefix and Number: STA569
b.	Full Title: Nursing Statistical Methods
c.	Transcript Title (if full title is more than 40 characters): Nursing Statistical Methods
d.	To be Cross-Listed[2] with (Prefix and Number): _____
e.	Courses must be described by <u>at least one</u> of the meeting patterns below. Include number of actual contact hours[3] for each meeting pattern type.

_____ Lecture	_____ Laboratory[1]	_____ Recitation	_____ Discussion	_____ Indep. Study
_____ Clinical	_____ Colloquium	_____ Practicum	_____ Research	_____ Residency
_____ Seminar	_____ Studio	__X__ Other – Please explain:	Distance Learning/Internet	

f.	Identify a grading system: ☒ Letter (A, B, C, etc.) ☐ Pass/Fail	
g.	Number of credits: 4	
h.	Is this course repeatable for additional credit?	YES ☐ NO ☒
	If YES: Maximum number of credit hours: _____	
	If YES: Will this course allow multiple registrations during the same semester?	YES ☐ NO ☐
i.	Course Description for Bulletin:	This course is an introduction to research statistics with special emphasis to statistics occuring in Nursing research. Topics include exploratory data analysis, random variables (binomial and normal distributions), estimation of proportions and means, correlation, regression, chi-squared tests, and ANOVA. Examples will be consistently drawn from nursing and/or biomedical applications with analysis illustrated in software common to nursing data analysis (SPSS and Excel).
j.	Prerequisites, if any: MA109	
k.	Will this course also be offered through Distance Learning?	YES[4] ☒ NO ☐
l.	Supplementary teaching component, if any: ☐ Community-Based Experience ☐ Service Learning ☐ Both	

3.	**Will this course be taught off campus?**	YES ☐ NO ☒

NEW COURSE FORM

4.	**Frequency of Course Offering.**			
a.	Course will be offered (check all that apply): ☒ Fall ☒ Spring ☒ Summer			
b.	Will the course be offered every year?		YES ☒	NO ☐
	If NO, explain: _____			
5.	**Are facilities and personnel necessary for the proposed new course available?**		YES ☒	NO ☐
	If NO, explain: _____			
6.	**What enrollment (per section per semester) may reasonably be expected?** 20-40			
7.	**Anticipated Student Demand.**			
a.	Will this course serve students primarily within the degree program?		YES ☒	NO ☐
b.	Will it be of interest to a significant number of students outside the degree pgm?		YES ☐	NO ☒
	If YES, explain: _____			
8.	**Check the category most applicable to this course:**			
	☒ Traditional – Offered in Corresponding Departments at Universities Elsewhere			
	☐ Relatively New – Now Being Widely Established			
	☐ Not Yet Found in Many (or Any) Other Universities			
9.	**Course Relationship to Program(s).**			
a.	Is this course part of a proposed new program?		YES ☐	NO ☒
	If YES, name the proposed new program: _____			
b.	Will this course be a new requirement[5] for ANY program?		YES ☒	NO ☐
	If YES[5], list affected programs: Course will be an acceptable substitute for STA570 for nursing students			
10.	**Information to be Placed on Syllabus.**			
a.	Is the course 400G or 500?		YES ☒	NO ☐
	If YES, the *differentiation for undergraduate and graduate students must be included* in the information required in **10.b**. You must include: (i) identification of additional assignments by the graduate students; and/or (ii) establishment of different grading criteria in the course for graduate students. (See *SR 3.1.4*.)			
b.	☒	The syllabus, including course description, student learning outcomes, and grading policies (and 400G-/500-level grading differentiation if applicable, from **10.a** above) are attached.		

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

Distance Learning Form

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

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

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

Course Number and Prefix: STA 569	Date: 4/19/2010
Instructor Name: Mark Gebert	Instructor Email: gebert@uky.edu
Check the method below that best reflects how the majority of course of the course content will be delivered. Internet/Web-based ☒　　　Interactive Video ☐　　　Hybrid ☐	

Curriculum and Instruction	
1.	How does this course provide for timely and appropriate interaction between students and faculty and among students? Does the course syllabus conform to University Senate Syllabus Guidelines, specifically the Distance Learning Considerations?
	Special emphasis is made in an introductory web-based video lecture of the many avenues of communication that are open between students and faculty during the course: lectures and labs prepared by the faculty member for the students to view, the students indicate their participation in those by marking the former as "Reviewed" in Blackboard and for the latter returning a corresponding worksheet for credit. The faculty member's email address is on the first screen the student sees when watching the intro video; it is echoed in the syllabus, on the Blackboard site, and of couse they may reply to any of the emails sent during the term. To supplement the virtual office hours, the instructor will encourage asking questions about lectures, homework, labs via discussion threads on Blackboard, with different incentives given for starting/participating in these threads.
	The syllabus has been reviewed and to the best of our knowledge complies with the Senate regulations. Of course several aspects (the relative weights for grades and some course policies such as for attendance) may vary based on instructor preferences.
2.	How do you ensure that the experience for a DL student is comparable to that of a classroom-based student's experience? Aspects to explore: textbooks, course goals, assessment of student learning outcomes, etc.
	While we do not intend a "campus" version of STA569 (this course is intended exclusively for distance learning), the statements here are intended to express similarities between STA569 and other on campus graduate service courses offered by the department of Statistics.
	The textbook and course goals of this course are standard (special emphasis has been given to nursing statistics per the request of the college of nursing, but many of the learning outcomes reflect standard methods taught in all introductory statistics courses). Lectures are currently (this course is offered as A&S500

	currently) handled asynchronously, but the instructor has the ability to speak as in a real lecture and conduct examples in real time on a virtual "whiteboard". These lectures are stored and are viewed asynchronously by the student. This has the advantage that the student can pause, rewind, and replay the lecture unlike a regular classroom setting. If the student watches the lecture during the instructors virtual office hours, the student also has the opportunity to immediately ask the instructor questions as they view the lecture. Tests are handled either by the student coming to campus for the exam or by a proctor system where external proctors must be approved prior to exams for students unable to come to campus for exams.
3.	How is the integrity of student work ensured? Please speak to aspects such as password-protected course portals, proctors for exams at interactive video sites; academic offense policy; etc. Students in the instructor's classroom-based sections are not forbidden from collaboration on any exercises other than examinations. That said, both of the sites mentioned above (U.K.'s Blackboard, Pearson's Course Compass, where MyStatLab resides) are password-protected. Regarding examinations, students will be emailed both a pdf file and reminded during the introductory video of the URL of a copy of a proctor approval form. This form will describe the requirements for serving as a proctor and give the deadline for returning it to our department. The students will be told that failure to find a satisfactory proctor by the required date will be grounds for a 0 (zero) for the first (and any subsequent) exam(s). As was pointed out above, the syllabus will include the academic offense policy, at least by reference. The proctor approval form will echo this, as will the first test package (not the first test).
4.	Will offering this course via DL result in at least 25% or at least 50%* (based on total credit hours required for completion) of a degree program being offered via any form of DL, as defined above? no If yes, which percentage, and which program(s)? *As a general rule, if approval of a course for DL delivery results in 50% or more of a program being delivered through DL, the effective date of the course's DL delivery will be six months from the date of approval.
5.	How are students taking the course via DL assured of equivalent access to student services, similar to that of a student taking the class in a traditional classroom setting? The instructor will make the identical effort in all media--introductory video, course syllabus, early course lectures--that is made in classroom-based sections to make certain DL students are aware of the services available to them. See above for some of the options available to the students.
	Library and Learning Resources
6.	How do course requirements ensure that students make appropriate use of learning resources? As in the instructor's classroom-based sections, the greatest incentive that can be provided to ensure student use of learning resources is the carrot/stick of a grade component being based upon, at the very least, accessing the various learning resources mentioned above. Appropriate use can be further encouraged by reflecting increased performance in later assessments (such as lab and exam scores).
7.	Please explain specifically how access is provided to laboratories, facilities, and equipment appropriate to the course or program. Enrollment at the University of Kentucky guarantees access to elearning.uky.edu, or U.K.'s Blackboard site. That access to MyStatLab with the online homework, study plan and e-textbook, can be purchased separately or with a physical copy of the textbook is communicated to the student prior to the start of the term via email upon enrollment in the DL section.

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

Distance Learning Form

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	Student Services
8.	How are students informed of procedures for resolving technical complaints? Does the syllabus list the entities available to offer technical help with the delivery and/or receipt of the course, such as the Teaching and Academic Support Center (http://www.uky.edu/TASC/index.php) and the Information Technology Customer Service Center (http://www.uky.edu/UKIT/)? The syllabus provides this information
9.	Will the course be delivered via services available through the Teaching and Academic Support Center? Yes ☒ No ☐ If no, explain how students enrolled in DL courses are able to use the technology employed, as well as how students will be provided with assistance in using said technology.

10.	Does the syllabus contain all the required components, below? ☒ Yes
	
	 ☐ Instructor's *virtual* office hours, if any.
	 ☐ The technological requirements for the course.
	 ☐ Contact information for TASC (http://www.uky.edu/TASC/; 859-257-8272) and Information Technology Customer Service Center (http://www.uky.edu/UKIT/; 859-257-1300).
	 ☐ Procedure for resolving technical complaints.
	 ☐ Preferred method for reaching instructor, e.g. email, phone, text message.
	 ☐ Maximum timeframe for responding to student communications.
	 ☐ Language pertaining academic accommodations:
	    o "If you have a documented disability that requires academic accommodations in this course, please make your request to the University Disability Resource Center. The Center will require current disability documentation. When accommodations are approved, the Center will provide me with a Letter of Accommodation which details the recommended accommodations. Contact the Disability Resource Center, Jake Karnes, Director at 859-257-2754 or jkarnes@email.uky.edu."
	 ☐ Information on Distance Learning Library Services (http://www.uky.edu/Libraries/DLLS)
	    o Carla Cantagallo, DL Librarian
	    o Local phone number: 859 257-0500, ext. 2171; long-distance phone number: (800) 828-0439 (option #6)
	    o Email: dllservice@email.uky.edu
	    o DL Interlibrary Loan Service: http://www.uky.edu/Libraries/libpage.php?lweb_id=253&llib_id=16

11.	I, the instructor of record, have read and understood all of the university-level statements regarding DL. Instructor Name: Mark Gebert Instructor Signature:

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

STA569/AS 500: Applied Statistical Methods

Instructor: Mark A. Gebert, Ph.D.

mark.gebert@uky.edu*

Patterson Office Tower 867, Phone: 859-257-6903

Office Hours: Monday/Wednesday 11 – noon, 1 – 2, & by appointment

*Email is, easily, preferred method of contact. Emails sent during "regular business hours" (M – F, 8 – 5) will be answered with 6 hours unless I've announced special circumstances (or unanticipated life circumstances prevent it, such as getting hit by a bus). This also how any virtual (online or via phone) office hours will be conducted – should a problem, either with the material or administrative prove too involved to be solved via email, we (the instructor and the student) will find a mutually convenient time to communicate via online means or phone so that the problem is worked out to the student's satisfaction.

Text: Triola, Mario F., *Essentials of Statistics*. 3rd Ed. With MyStatLab access (bundled with the text *typically less expensive*)

Additional required materials:

➜ Technological: a computer system sufficiently updated and fast enough to view the online lectures (in Flash video format) that constitute the total of the instructional time for the course; an internet service provider (ISP) giving, again, fast enough access to the University of Kentucky Blackboard web site (elearning.uky.edu) so that you may view the lecture and lab videos; the free Adobe Flash video viewer to actually watch the videos; and the free Adobe Reader to download/print the notes files that accompany each video

➜ Calculator ("1-variable statistics" on the package)

➜ MyStatLab (**required** for course homework; additional study tools and e-copy of text can be found there)

➜ SPSS access* (not needed until April)

*I say "access" rather than "license", in case the small license fee (~$95/two PC's at last check) is a burden; your SPSS responsibilities for this course will be much easier to take care of and you will be filling a future need (NUR903 requires the purchase of the license) if you just go ahead and purchase the license for this course.

Recommended materials:

Pallant, Julie, *SPSS Survival Manual: A Step by Step Guide to Data Analysis Using SPSS for Windows (Version 15)*. 3rd Ed., 2007.

Course goals:

This course includes material on statistical concepts and procedures, the application thereof with the assistance of computer software both specific to the field, such as SPSS, and generally available and applicable, such as Microsoft Excel.

Student Outcomes:

A student's successful completion of this course is shown by the following outcomes: demonstrating mastery of basic statistical concepts, including those associated with its language, executing elementary statistical procedures, and correctly interpreting the results of these.

Course grading:

Your course grade will be calculated based on the following components:

Participation	10%
Homework	15%
Instructor/TA guided Exercises ("Labs")	15%
Tests (3 – 2/17, 3/31, and 5/5 for 20% each, no cumulative final)	60%

Graduate grading scale: 90 -100, A; 80 - < 90, B; 70 - < 80, C; <70, E

Undergraduate grading scale: 85 -100, A; 75 - < 85 B; 65 - < 75, C; 55 - < 65, D; <55, E; these percentages are calculated based on one less homework score and one less lab score than those for the graduate grading scale.

Students will be provided with a midterm evaluation (by March 10) based on grades available at that time.

Regarding assessment of learning outcomes: homework and lab worksheets will be identical to the classroom-based version of the course. Homework is viewed and submitted in the MyStatLab online course software. The lab worksheets are generally Word documents downloaded, completed by the student and emailed to the instructor.

The portion of the grade that cannot be made identical is participation, and this ties into making the conveyance of the material for the distance-learning student comparable to that of a classroom-based student: lectures, both for classroom and lab material, will be PowerPoint-based, with narration/included handwritten examples to augment student understanding, just as would be done using a document camera in the classroom. However, to meet the distance learning students' need, these will be posted on the University of Kentucky's Blackboard system in a Flash video format for viewing at the students' convenience.

The participation portion of the course grade is earned through the "Discussion Board" facility in, once again, the University of Kentucky's Blackboard web site. Expectations for discussion thread initiation and participation will be specified (and differentiatied for undergraduate versus graduate students) by the instructor.

Academic Integrity Policy

Students are not forbidden (in fact, are encouraged) from collaboration on any exercises other than examinations.

Regarding examinations, students unable to attend the face-to-face administration of the examinations will be emailed both a pdf file and reminded during the introductory video of the URL of a copy of a proctor approval form. This form will describe the requirements for serving as a proctor and give the deadline for returning it to our department. The students will be told that failure to find a satisfactory proctor by the required date will be grounds for a 0 (zero) for the first (and any subsequent) exam(s).

The University of Kentucky's Academic offense policy may be found here:
> http://www.uky.edu/Ombud/acadoffenses/new_policy.pdf

Student Services Available

- Contact information for TASC: http://www.uky.edu/TASC ; 859.257.8272
- Contact information for Information Technology Customer Service Center: http://www.uky.edu/UKIT ; 859.257.1300
- Contact information for Distance Learning Library Services: http://www.uky.edu/Libraries/DLLS
- If you have worked (or tried to work) with all three of these entities and are still unable to gain access to any portion of the course, contact me at mark.gebert@uky.edu and I will begin work on my end to help you.
- If you have a documented disability that requires academic accomodations in this course, please make your request to the University Disability Resource Center. The Center will require current disability documentation. When accomodations are approved, the Center will provide me with a Letter of Accomodation which details the recommended accomodations. Contact the Disability Resource Center, Jake Karnes, Director at 859.257.2754 or jkarnes@email.uky.edu.
- The UK policy on excused absences is as follows:
  - Make-up opportunities: The instructor shall give the student an opportunity to make up the work and/or the exam missed during an excused absence…" implies the student shall not be penalized for the excused absence.
  - Verification of absences: Students missing work due to an excused absence bear the responsibility of informing the instructor about their excused absence within one week following the period of the excused absence (except where prior notification is required), and of making up the missed work.
- You almost certainly won't need to know these facts:
  - Information on Distance Learning Library Services (http://www.uky.edu/Libraries/DLLS)
    - Carla Cantagall, DL Librarian
    - Local phone number: 859 257-0500, ext. 2171; long-distance phone number: (800) 828 -0439 (option #6)
    - Email: dllservice@email.uky.edu
    - DL Interlibrary Loan Service: http://www.uky.edu/Libraries/libpage.php?lweb_id=253&llib_id=16

(Tentative) Lecture Schedule: (approximately 2 sessions/week—exception(s) noted)

Session	Contents [book section(s), topic(s)]	Dates
Pre-course	Course logistics summary	Prior to 1/16
1	1-1 Overview of Statistics, 1-2 Types of Data	1/16 to 1/24
2	1-3 Critical Thinking, 1-4 Design of Experiments	
3	2 -1 Overview of Summarizing and Graphing Data, 2-2 Frequency Distributions	1/23 to 1/31
4	2-3 Histograms, 2-4 Statistical Graphics	
5	3-1 Overview of Descriptive Statistics, 3-2 Measures of Center	1/30 to 2/7
6	3-3 Measures of Variation	
7,8	3-4 Measures of Relative Standing, 3-5 Exploratory Data Analysis (EDA)	2/6 to 2/14
9	4-1 Overview of Probability, 4-2 Fundamentals	
	Test 1 Material Ends Here; Exam given Wednesday, 17 February @ 3:00 p.m. (location TBA)	
10	5-1 Overview of Probability Distributions, 5-2 Random Variables	2/13 to 2/21
11	5-3 Binomial Probability Distributions, 5-4 Mean, Variance, and Standard Deviation for the Binomial Distribution	
12	6-1 Overview of Normal Probability Distributions, 6-2 The Standard Normal Distribution	2/20 to 2/28
13	6-2 The Standard Normal Distribution (cont'd)	
14	6-3 Applications of Normal Distributions	2/27 to 3/7
15, 16	6-4 Sampling Distributions and Estimators, 6-5 The Central Limit Theorem	
17	7-1 Overview of Estimation, 7-2 Estimating a Population Proportion	3/6 to 3/14*
18	7-3 Estimating a Population Mean: σ Known	
19	7-4 Estimating a Population Mean: σ Not Known	3/13 to 3/28*,**
	Test 2 Material Ends Here; Exam given Wednesday, 31 March @ 3:00 p.m. (location TBA)	
20	8-1 Overview of Hypothesis Testing, 8-2 Basics of Hypothesis Testing	
21	8-2 Basics of Hypothesis Testing (cont'd)	3/27 to 4/4
22	8-3 Testing a Claim about a Proportion	
23	8-4 Testing a Claim about a Mean: σ Known,	4/3 to 4/11
24	8-5 Testing a Claim about a Mean: σ Not Known, 9-4 Inferences from Matched Pairs	
25	10-1 Overview of Correlation and Regression,	4/10 to 4/18
26	10-2 Correlation	
27	10-3 Regression	4/17 to 4/25
28	11-1 Overview of Chi-Square and Analysis of Variance, 11-2 Multinomial Experiments: Goodness-Of-Fit	
29	11-3 Contingency Tables: Independence and Homogeneity	4/24 to 5/2
30	11-4 Analysis of Variance	
	Test 3 Material Ends Here; Exam given Wednesday, 5 May @ 6 p.m. (location TBA). There is no final exam.	

*Spring Break is in here—plan ahead and you don't have to do any work during that week ☺**.**

**Note—the first session of this week is covered on Test 2; the second, on Test 3.

(Tentative) Lab Schedule: (one/week—exception(s) noted)

Dates	Lab Contents
1/16 to 1/24	Frequency distribution—what do those numbers mean?
1/23 to 1/31	Excel commands/SPSS output for pie charts, time plots—interpretation
1/30 to 2/7	SPSS output for measures of center, variation—verify on calculator, interpret
2/6 to 2/14	Boxplots—**C**omputer **V**iruses **D**estroy **o**r **T**erminate In one simple plot
2/13 to 2/21	Test 1 Review*
2/20 to 2/28	Illustration of the binomial—sampling with replacement (some Excel (?)/SPSS work/output)
2/27 to 3/7	Normal calculations—calculator work/practice
3/6 to 3/14	What's so normal about the Normal distribution, anyway (CLT)?
3/13 to 3/28	Effects of confidence level, population variability, sample size on confidence interval/margin of error (SPSS output)
3/27 to 4/4	Test 2 Review*
4/3 to 4/11	Intro to (using) SPSS—old stuff—mean, variance, confidence intervals
4/10 to 4/18	More SPSS—new stuff—hypothesis tests about a single mean or proportion
4/17 to 4/25	Last SPSS—linear regression
4/24 to 5/2	Test 3 Review*

*Test review—*ought* to be completed before taking corresponding test.