

Course Information

Date Submitted: 11/10/2016

Current Prefix and Number: STA - Statistics , STA 569 APPLIED STATISTICAL METHODS

Other Course:

Proposed Prefix and Number: STA 569

What type of change is being proposed?

Major Change

Should this course be a UK Core Course? No

1. General Information

a. Submitted by the College of: ARTS & SCIENCES

b. Department/Division: Statistics

c. Is there a change in 'ownership' of the course? No

If YES, what college/department will offer the course instead: Select...

e. Contact Person

Name: William S. Rayens

Email: rayens@uky.edu

Phone: 859-257-7061

Responsible Faculty ID (if different from Contact)

Name:

Email:

Phone:

f. Requested Effective Date

Semester Following Approval: Yes OR Effective Semester:

2. Designation and Description of Proposed Course

a. Current Distance Learning (DL) Status: Already approved for DL*

b. Full Title: APPLIED STATISTICAL METHODS

Proposed Title: APPLIED STATISTICAL METHODS

c. Current Transcript Title: APPLIED STATISTICAL METHODS

Proposed Transcript Title:

d. Current Cross-listing: none

Proposed – ADD Cross-listing :

Proposed – REMOVE Cross-listing:

e. Current Meeting Patterns

LECTURE: 4

Proposed Meeting Patterns

LECTURE: 3

f. Current Grading System: ABC Letter Grade Scale

Proposed Grading System: *Letter (A, B, C, etc.)*

g. Current number of credit hours: 4

Proposed number of credit hours: 3

h. Currently, is this course repeatable for additional credit? No

Proposed to be repeatable for additional credit? No

If Yes: Maximum number of credit hours:

If Yes: Will this course allow multiple registrations during the same semester? No

2i. Current Course Description for Bulletin: This course is an introduction to research statistics. 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 biomedical or professional applications with analysis illustrated in software common to data analysis (SPSS and Excel).

Proposed Course Description for Bulletin: This course is an introduction to research statistics. 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 drawn from biomedical or professional applications with analysis illustrated in software common to data analysis.

2j. Current Prerequisites, if any: Prereq: MA 109

Proposed Prerequisites, if any: MA 109 or consent of instructor

2k. Current Supplementary Teaching Component:

Proposed Supplementary Teaching Component: No Change

3. Currently, is this course taught off campus? No

Proposed to be taught off campus? No

If YES, enter the off campus address:

4. Are significant changes in content/student learning outcomes of the course being proposed? No

If YES, explain and offer brief rationale: We do not believe that any significant changes in learning outcomes or content will have to be made in order to deliver this course as a 3 credit hour course. Please see the attached document that summarizes the changes to the course. We have also attached the current and proposed revised syllabus.

5a. Are there other depts. and/or pgms that could be affected by the proposed change? Yes

If YES, identify the depts. and/or pgms: The College of Nursing. CON sponsors this course for their students and has asked STA to change the number of credit hours from 4 to 3. This is part of a much larger set of changes that CON has been implementing in their online curriculum.

5b. Will modifying this course result in a new requirement of ANY program? Yes

If YES, list the program(s) here: The College of Nursing will have to change their program requirements (for the program that requires STA 569). However, the CON has asked us to make this change so they are ready to change those requirements.

6. Check box if changed to 400G or 500: No

Distance Learning Form

Instructor Name:

Instructor Email:

Internet/Web-based: No

Interactive Video: No

Hybrid: No

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?

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.

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.

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?

If yes, which percentage, and which program(s)?

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?

6. How do course requirements ensure that students make appropriate use of learning resources?

7. Please explain specifically how access is provided to laboratories, facilities, and equipment appropriate to the course or program.

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 Information Technology Customer Service Center (<http://www.uky.edu/UKIT/>)?

9.Will the course be delivered via services available through the Distance Learning Program (DLP) and the Academic Technology Group (ATL)? NO

If no, explain how student 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? NO

11.I, the instructor of record, have read and understood all of the university-level statements regarding DL.

Instructor Name:

Rationale for credit hour change for STA 569

This course change involves reducing the number of credit hours from 4 to 3 credit hours.

Proposed Changes:

1. Abbreviation in a topic in the course. “Formal probability” will now be condensed and updated to include topics in probability, but on a broader, more conceptual level appropriate for the primary audience of graduate students in disciplines outside the field of statistics.
1. A recognition that this course does not contain a formal “lab”. This course was modeled after STA 570, which is a 4 credit-hour course. STA 570 has a formal “lab” that meets separately each week, and contains separate lab assignments. STA 569 is an online course that incorporates “lab-type” assignments into the regular homework assignment. In addition, “labs” in STA 570 were also a time to provide additional assistance to students on homework-type problems. STA 569 has approximately 70 lecture videos that contain content and examples. Students can watch as many times as they choose which provides an embedded source of assistance on the homework.

Background

This course was designed for graduate students in nursing (both Ph.D. and DNP). Other students outside of nursing also take the course to fulfill statistics requirements, but nursing is the primary client. They have requested that there be a reduction in the number of credit hours to aid their graduate students. Their request comes at a good time in the larger evolution of how probability is being taught in statistics courses. That is, while probability theory underlies much of the field of statistics, simulation-based methods can aid in the understanding of quantifying randomness and variability without requiring students to become immersed in minute details that do not serve well their larger needs.

STA569 Applied Statistical Methods

Instructor:

Dr. Melissa Pittard
Melissa.Pittard@uky.edu*
MDS 325A (Lexington campus address)

Secondary Instructor/MyStatLab facilitator:

Pamela Lancaster
Pamela.Lancaster@uky.edu

Teaching Assistant:

Menghan Wang
Menghan.wang@uky.edu

This course runs during the Fall Semester 2015

*Email is, easily, preferred method of contact. Emails sent during “regular business hours” (M–F, 8–5) will be answered by the end of the day unless I’ve announced special circumstances. This also how any virtual (online or via phone or Skype) 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: Agresti and Franklin., *Statistics: The Art and Science of Learning from Data*. 3rd Ed.* with MyLab access (bundled with the text *typically less expensive*) The cheapest method is to buy the MyLab access and you will get the e-book with it. You could also hunt down a previous addition of the text for reference, but you must purchase the access code. You can purchase the access code directly from Pearson (see URL below).

ISBN for physical book plus MyLab access:

ISBN-10: 0321891953

ISBN-13: 9780321891952

ISBN for e-text and MyLab access:

ISBN-10: 0321694643

ISBN-13: 9780321694645

course ID: pittard61586

This course ID is unique to the course. You will go to

<http://www.pearsonmylabandmastering.com/northamerica/mystatlab/> and register with your email address, your access code (or credit card information), and course ID (above).

Technology Requirements:

- In order to participate in this course, you will need access to a computer with the minimum hardware, software and internet configuration described at this site:

<https://community.canvaslms.com/docs/DOC-2059>

- Here are a list of supported browsers

<https://community.canvaslms.com/docs/DOC-1284>

- You will need to install a number of plugins on your computer. MyLab will have specific plugins. If using a UK computer these plugins should be already installed.

<http://www.pearsonmylabandmastering.com/northamerica/system-requirements/>

<http://www.pearsonmylabandmastering.com/northamerica/students/support/index.html>

- To check if your browser has Flash, Adobe Acrobat Reader and QuickTime movie player, click this link:

<http://wiki.uky.edu/blackboard/Wiki%20Pages/Browser%20Eye%20Chart.aspx>

If you do not have these, you can download them from this site.

→ To download Windows Media Player, click this link:

<http://www.microsoft.com/windows/windowsmedia/player/10/default.aspx>

→ Students and faculty can download Microsoft Office Suite (including Word and PowerPoint) from this

site:

<https://download.uky.edu/> for free!

Additional required materials:

- **Access to Canvas:** This course will be conducted through Canvas. You should look for emails/announcements on Canvas weekly or more. Videos, powerpoints, study aids, etc. will all be housed on Canvas. Additionally, you will submit your labs via Canvas. Uk.instructure.com or go to linkblue page.
- Calculator (“1-variable statistics” on the package is helpful, but not required; you really need a calculator with the capability of doing square roots). I will not provide support for your calculator, but you can search for help for your calculator on YouTube and Google.
- **MyStatLab** (*required* for course homework; additional study tools and e-copy of text can be found there)
- **Statcrunch.** Statcrunch is a statistical software package that comes bundled with MyStatsLab. I will use it within the videos as many online homework datasets are pre-loaded into Statcrunch. It is very simple to use, but limited.
- **JMP access***
 - *I say “access” rather than “license”, however JMP licensing is available **at no cost** to any student of this course by simply requesting it from UK Information/Instructional Technology. Go to download.uky.edu. Make sure you download version 11 or 12. JMP is also available at various computer labs on campus as well as the Virtual Den.
 - * If you are familiar with another statistics package (SAS, STATA, SPSS, Excel, etc.) please feel free to use it. I will, however, only provide support for JMP.

Recommended materials:

JMP has tutorials within JMP itself, but you can find numerous tutorial videos on the internet. Try YouTube.

Testing

Exams 1 and 2 are to be taken online within the student's Pearson MyStatLab account. Login for the site is <http://pearsonmylabandmastering.com>

The system requirements for MyStatLab may be found at:
<http://pearsonmylabandmastering.com/system-requirements> and
<http://www.mathxl.com/BrowserCheck/PickBook.aspx?mml=yes>

(Choose the text Agresti: Statistics: The Art and Science of Learning from Data 3e. You will not need the TestGen Plug-in, but the other components are necessary). **You will also want to make sure that you allow pop-ups or the student may miss out on some of the features needed to complete the test. It is acceptable for the student to use his/her personal computer.**

There is a time limit and the exam must be taken in one sitting. Once the exam closes due to the student submitting it or time expires, it cannot be reopened.

Exam 1 is available at 12:01am 10/12 and must be submitted before 11:59 p.m. on 10/16 2015 EDT.

Exam 2 will be available on 12/14, 12:01am and must be submitted before 11:59 on 12/18 2015.

The exams will be open book/notes. Please do not communicate with each other either during or after the exam as to the content of an exam. You will be on your honor.

Other details will be made available as the exams draw near.

Course goals:

A student's successful completion of this course entails: mastering basic statistical concepts, including those associated with its language, the execution of elementary statistical procedures, and correct interpretation of results. This mastery will be practiced and demonstrated using real-world exercises with the assistance of computer software both specific to the field, such as SPSS, and generally available and applicable, such as Microsoft Excel.

Course grading:

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

Homework	30%
Instructor/TA guided Exercises ("Labs")	15%
Project	15%
Tests (Exam 1 and Exam 2; each worth 20%)	40%

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

Undergraduate grading scale: 87 -100, A; 77 - < 87, B; 67 - < 77, C; 55 - < 67, D; <55, E

Regarding assessment of learning outcomes:

- homework is viewed and submitted in the MyStatLab online course software. The lowest MyStatLab homework will be dropped.
- Labs are an opportunity to work on problems that may be a bit longer, addresses concepts, makes use of computing (graphs, output), etc. These problems must be typed in a Microsoft Word or pdf document and submitted to the Canvas (Canvas) and we will use Turnitin link. Turnitin is a plagiarism software. These will be graded by the TA and grades will be posted on Canvas. *You may work together, but please submit your own work. Plagiarism is a serious offense that will result with a minimum of a zero for the assignment and a reduction of one letter grade for the course.*
- The final project: This is a data analysis project where you will analyze published data. You will utilize the methods learned during this course and apply them to your data set. Details will be provided in a separate document.
- Exams: Exams will be taken online via MyStatLab. You will be given a time limit of two-hours once you open the exam. You will have only one attempt with the exam and once the exam is open, it cannot be open again, so you must take the exam in one sitting. The exam is open book, but you must do the work on your own. You are on your honor here. The exam window will be five days (see the schedule below).

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 Canvas for the students' viewance.

Academic Integrity Policy

Students are not forbidden (in fact, are encouraged) from collaboration on any exercises other than examinations. You **MUST**, however, turn in your own work that is unique to you.

Regarding examinations, students will be in communication with Ms. Lancaster regarding finding an approved proctoring site if you need one and doing so with enough time to spare that logistics may be put in place for the student to take the course's two exams. Failure to find a satisfactory proctor by the required date will be grounds for a 0 (zero) for the first (and subsequent) exam.

Plagiarism is a serious offense that will result with a minimum of a zero for the assignment or exam and a reduction of one letter grade for the course.

The University of Kentucky's Academic offense policy may be found here:

http://www.uky.edu/Ombud/acadoffenses/new_policy.pdf

Student Services Available

- The Teaching and Academic Support Center (TASC) website (<http://www.uky.edu/TASC/>) offers additional information and resources that can promote a successful "online course" learning experience. They may also be reached at 859-257-8272.
- If you experience technical difficulties with accessing course materials, the Customer Service Center may be able to assist you. You may reach them at 859-218-HELP (4357) or by e-mail at helpdesk@uky.edu. Please also inform the course instructor when you are having technical difficulties.
- 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 melissa.pittard@uky.edu and I will begin work on my end to help you.

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, DRC Address: 725 Rose Street, Multidisciplinary Science Building (the building between the T. H. Morgan Building (Biological Sciences) and the College of Nursing), Suite 407. Phone: 257-2754. Director: David Beach dtbeac1@uky.edu

- 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&lilib_id=16

(Tentative) Lecture Schedule:

Week	Contents [book section(s), topic(s)]	
Pre-course	Course logistics summary: get MyLab access; course ID: pittard61586	By 8/26
1	Chapter 1 Statistics: The Art and Science of Learning from Data 2.1 What Are the Types of Data? 2.2 How Can We Describe Data Using Graphical Summaries?	HW 1 due 9/4
2	2.3 How Can We Describe the Center of Quantitative Data? 2.4 How Can We Describe the Spread of Quantitative Data? 2.5 How Can Measures of Position Describe Spread? 2.6 How Can Graphical Summaries Be Misused?	HW 2 due 9/11
3	3.1 How Can We Explore the Association between Two Categorical Variables? 3.2 How Can We Explore the Association between Two Quantitative Variables? 3.3 How Can We Predict the Outcome of a Variable? 3.4 What are Some Cautions in Analyzing Associations?	HW 3 due 9/18
4	4.1 Should We Experiment or Should We Merely Observe? 4.2 What Are Good Ways and Poor Ways to Sample? 4.3 What Are Good Ways and Poor Ways to Experiment? 4.4 What Are Other Ways to Perform Experimental and Observational Studies?	HW 4 due 9/25
5	5.1 How Can Probability Quantify Randomness? 5.2 How Can We Find Probabilities? 5.3 Conditional Probability: What's the Probability of A, Given B? 5.4 Applying the Probability Rules	HW 5 due 10/2
6	6.1 How Can We Summarize Possible Outcomes and their Probabilities? 6.2 How Can We Find Probabilities for Bell-Shaped Distributions? 6.3 How Can We Find Probabilities when Each Observation Has Two Possible Outcomes	HW 6 due 10/9
7	7.1 How Likely Are the Possible Values of a Statistic? The Sampling Distribution 7.2 How Close Are Sample Means to Population Means 7.3 How Can We Make Inferences about a Population?	HW 7 due 10/16
	Test 1: Must be taken between the dates 10/12 and 10/16 Note: Includes material from HW1-7	
8	8.1 What Are Point and Interval Estimates of Population Parameters? 8.2 How Can We Construct a Confidence Interval to Estimate a Population Proportion? 8.3 How Can We Construct a Confidence Interval to Estimate a Population Mean?	HW 8 due 10/23
9	8.4 How Do We Choose the Sample Size for a Study? 8.5 How Do Computers Make New Estimation Methods Possible?	HW 9 due 10/30
10	9.1 What Are the Steps for Performing a Significance Test? 9.2 Significance Tests about Proportions	HW 10 due 11/6
11	9.3 Significance Tests about Means 9.4 Decisions and Types of Errors in Significance Tests 9.5 Limitations of Significance Tests	HW 11 due 11/13
12	10.1 Categorical Response: How Can We Compare Two Proportions? 10.2 Quantitative Response: How Can We Compare Two Means?	HW 12 due 11/20
13	10.3 Other Ways of Comparing Means and Comparing Proportions?, 10.4 How Can We Analyze Dependent Samples?	HW 13 due 11/29
14	11.1 What Is Independence and What Is Association? 11.2 How Can We Test whether Categorical Variables are Independent? 11.3 How Strong is the Association? 11.4 How Can Residuals Reveal the Pattern of Association? 11.5 What if the Sample Size is Small? Fisher's Exact Test	HW 14 due 12/4
15	12.1 How Can We "Model" How Two Variables Are Related	HW 15 due 12/11
	12.2 How Can We Describe Strength of Association? 12.3 How Can We Make Inferences about the Association?	
	12.4 What Do We Learn from How the Data Vary around the Regression Line?	
	14.1 How Can We Compare Several Means?: One-Way ANOVA	
16	Test 2;Material Ends Here Note: test 2 must be taken between 12/14 and 12/18 with material included from HW 8-14	

(Tentative) Lab Schedule: (approximately one/week)

Due date	Lab Contents
9/9	Getting data into JMP and Statcrunch and Graphical Methods
9/16	Descriptive (Numerical) Statistics
9/23	Bivariate Analysis
9/30	Sampling and Experimentation considerations
10/7	Part 1 of final project
10/14	Bye (no lab)
10/28	Survey and Confidence intervals (Lab 7 and 8)
11/4	Confidence Intervals part 2
11/11	Hypothesis testing for one sample
11/18	Hypothesis testing part 2
11/25	Statistical significance in publications
12/2	Bye (no lab)
12/11	Project due

The labs will be submitted to Canvas and graded by the Lab Assistant Menghan Wang, Please do not ask the lab assistant to extend the due date or take late work.

STA569 Applied Statistical Methods

Instructor:

Dr. Melissa Pittard

Melissa.Pittard@uky.edu*

MDS 325A (Lexington campus address)

Teaching Assistant: TBA

*Email is, easily, preferred method of contact. Emails sent during “regular business hours” (M–F, 8–5) will be answered by the end of the day unless I’ve announced special circumstances. This also how any virtual (online or via phone or Skype) 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.

Course Description:

This course is an introduction to research statistics. 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 drawn from biomedical or professional applications with analysis illustrated in software common to data analysis.

Student Learning Outcomes:

After completing this course, the student will be able to:

1. Demonstrate understanding of statistical inference through the constructs of p-values, margins of error and confidence intervals, and formal hypothesis tests through their creation or evaluation.
2. Demonstrate an understanding of uncertainty as it relates to data collection and statistical inference.
3. Generate and/or analyze critically quantitative and graphic data summaries in their real-world contexts.
4. Integrate knowledge from available data and illustrate comprehension of that knowledge through summarization.

Text: Agresti and Franklin., *Statistics: The Art and Science of Learning from Data*. 3rd Ed.* with MyLab access (bundled with the text *typically less expensive*) The cheapest method is to buy the

MyLab access and you will get the e-book with it. You could also hunt down a previous addition of the text for reference, but you must purchase the access code. You can purchase the access code directly from Pearson (see URL below).

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This course ID is unique to the course. You will go to

<http://www.pearsonmylabandmastering.com/northamerica/mystatlab/> and register with your email address, your access code (or credit card information), and course ID (above).

Technology Requirements:

- In order to participate in this course, you will need access to a computer with the minimum hardware, software and internet configuration described at this site:
<https://community.canvaslms.com/docs/DOC-2059>
- Here are a list of supported browsers
<https://community.canvaslms.com/docs/DOC-1284>
- You will need to install a number of plugins on your computer. MyLab will have specific plugins. If using a UK computer these plugins should be already installed.
<http://www.pearsonmylabandmastering.com/northamerica/system-requirements/>
<http://www.pearsonmylabandmastering.com/northamerica/students/support/index.html>
- To check if your browser has Flash, Adobe Acrobat Reader and QuickTime movie player, click this link:

<http://wiki.uky.edu/blackboard/Wiki%20Pages/Browser%20Eye%20Chart.aspx>

If you do not have these, you can download them from this site.

→ To download Windows Media Player, click this link:

<http://www.microsoft.com/windows/windowsmedia/player/10/default.aspx>

→ Students and faculty can download Microsoft Office Suite (including Word and PowerPoint) from this site:

<https://download.uky.edu/> for free!

Additional required materials:

- **Access to Canvas:** This course will be conducted through Canvas. You should look for emails/announcements on Canvas weekly or more. Videos, powerpoints, study aids, etc. will all be housed on Canvas. Additionally, you will submit your project assignments via Canvas. Uk.instructure.com or go to linkblue page.

- Calculator (“1-variable statistics” on the package is helpful, but not required; you really need a calculator with the capability of doing square roots). I will not provide support for your calculator, but you can search for help for your calculator on YouTube and Google.
- **MyStatLab** (*required* for course homework; additional study tools and e-copy of text can be found there)
- **Statcrunch**. Statcrunch is a statistical software package that comes bundled with MyStatsLab. I will use it within the videos as many online homework datasets are pre-loaded into Statcrunch. It is very simple to use, but limited.
- **SPSS access***
 - *I say “access” rather than “license”, however SPSS licensing is available **at no cost** to any student of this course by simply requesting it from UK Information/Instructional Technology. Go to download.uky.edu. SPSS is also available at various computer labs on campus as well as the Virtual Den.
 - * If you are familiar with another statistics package (SAS, STATA, Excel, etc.) please feel free to use it. I will, however, only provide support for SPSS.

Recommended materials:

SPSS has tutorials within SPSS itself, but you can find numerous tutorial videos on the internet. Try YouTube.

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The system requirements for MyStatLab may be found at:
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Graduate grading scale: 90 -100, A; 80 - < 90, B; 70 - < 80, C; <70, E.

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Regarding assessment of learning outcomes:

- homework is viewed and submitted in the MyStatLab online course software. The lowest MyStatLab homework will be dropped.
- Project submission assignments are an opportunity to work on problems that may be a bit longer, addresses concepts, makes use of computing (graphs, output), etc. These problems must be typed in a Microsoft Word or pdf document and submitted to the Canvas (Canvas) and we will use Turnitin link. Turnitin is a plagiarism software. These will be graded by the TA and grades will be posted on Canvas. *You may work together, but please submit your own work. Plagiarism is a serious offense that will result with a minimum of a zero for the assignment and a reduction of one letter grade for the course.*
- The final project: This is a data analysis project where you will analyze published data. You will utilize the methods learned during this course and apply them to your data set. Details will be provided in a separate document.
- Exams: Exams will be taken online via MyStatLab. You will be given a time limit of two-hours once you open the exam. You will have only one attempt with the exam and once the exam is open, it cannot be open again, so you must take the exam in one sitting. The exam is open book, but you must do the work on your own. You are on your honor here. The exam window will be five days (see the schedule below).

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 Canvas for the students' viewance.

Academic Integrity Policy

Students are not forbidden (in fact, are encouraged) from collaboration on any exercises other than examinations. You MUST, however, turn in your own work that is unique to you.

Regarding examinations, students will be in communication with Ms. Lancaster regarding finding an approved proctoring site if you need one and doing so with enough time to spare that logistics may be put in place for the student to take the course's two exams. Failure to find a satisfactory proctor by the required date will be grounds for a 0 (zero) for the first (and subsequent) exam.

Plagiarism is a serious offense that will result with a minimum of a zero for the assignment or exam and a reduction of one letter grade for the course.

The University of Kentucky's Academic offense policy may be found here:

http://www.uky.edu/Ombud/acadoffenses/new_policy.pdf

Student Services Available

- The Teaching and Academic Support Center (TASC) website (<http://www.uky.edu/TASC/>) offers additional information and resources that can promote a successful "online course" learning experience. They may also be reached at 859-257-8272.
- If you experience technical difficulties with accessing course materials, the Customer Service Center may be able to assist you. You may reach them at 859-218-HELP (4357) or by e-mail at helpdesk@uky.edu. Please also inform the course instructor when you are having technical difficulties.
- 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 melissa.pittard@uky.edu and I will begin work on my end to help you.

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, DRC Address: 725 Rose Street, Multidisciplinary Science Building (the building between the T. H. Morgan Building (Biological Sciences) and the College of Nursing), Suite 407. Phone: 257-2754. Director: David Beach dtbeac1@uky.edu

- 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:

Week	Contents [book section(s), topic(s)]	
Pre-course	Course logistics summary: get MyLab access;	By 8/26
1	Chapter 1 Statistics: The Art and Science of Learning from Data 2.1 What Are the Types of Data? 2.2 How Can We Describe Data Using Graphical Summaries?	HW 1 due 9/4
2	2.3 How Can We Describe the Center of Quantitative Data? 2.4 How Can We Describe the Spread of Quantitative Data? 2.5 How Can Measures of Position Describe Spread? 2.6 How Can Graphical Summaries Be Misused?	HW 2 due 9/11
3	3.1 How Can We Explore the Association between Two Categorical Variables? 3.2 How Can We Explore the Association between Two Quantitative Variables? 3.3 How Can We Predict the Outcome of a Variable? 3.4 What are Some Cautions in Analyzing Associations?	HW 3 due 9/18
4	4.1 Should We Experiment or Should We Merely Observe? 4.2 What Are Good Ways and Poor Ways to Sample? 4.3 What Are Good Ways and Poor Ways to Experiment? 4.4 What Are Other Ways to Perform Experimental and Observational Studies?	HW 4 due 9/25
5	5.1 How Can Probability Quantify Randomness? 5.2 How Can We Find Probabilities? Concepts in probability using simulation. 6.1 How Can We Summarize Possible Outcomes and their Probabilities? 6.2 How Can We Find Probabilities for Bell-Shaped Distributions?	HW 5 due 10/2
6	7.1 How Likely Are the Possible Values of a Statistic? The Sampling Distribution 7.2 How Close Are Sample Means to Population Means 7.3 How Can We Make Inferences about a Population?	HW 6 due 10/9
7	8.1 What Are Point and Interval Estimates of Population Parameters? 8.2 How Can We Construct a Confidence Interval to Estimate a Population Proportion? 8.3 How Can We Construct a Confidence Interval to Estimate a Population Mean?	HW 7 due 10/16
	Test 1: Must be taken between the dates 10/12 and 10/16 Note: Includes material from HW1-7	

8	8.4 How Do We Choose the Sample Size for a Study? 8.5 How Do Computers Make New Estimation Methods Possible?	HW 8 due 10/23
9	9.1 What Are the Steps for Performing a Significance Test? 9.2 Significance Tests about Proportions	HW 9 due 10/30
10	9.3 Significance Tests about Means 9.4 Decisions and Types of Errors in Significance Tests 9.5 Limitations of Significance Tests	HW 10 due 11/6
11	10.1 Categorical Response: How Can We Compare Two Proportions? 10.2 Quantitative Response: How Can We Compare Two Means?	HW 11 due 11/13
12	10.3 Other Ways of Comparing Means and Comparing Proportions?, 10.4 How Can We Analyze Dependent Samples?	HW 12 due 11/20
13	11.1 What Is Independence and What Is Association? 11.2 How Can We Test whether Categorical Variables are Independent?	HW 13 due 11/29
14	11.3 How Strong is the Association? 11.4 How Can Residuals Reveal the Pattern of Association? 11.5 What if the Sample Size is Small? Fisher's Exact Test	HW 14 due 12/4
15	12.1 How Can We "Model" How Two Variables Are Related	HW 15 due 12/11
	12.2 How Can We Describe Strength of Association? 12.3 How Can We Make Inferences about the Association?	
	12.4 What Do We Learn from How the Data Vary around the Regression Line?	
	14.1 How Can We Compare Several Means?: One-Way ANOVA	
16	Test 2;Material Ends Here Note: test 2 must be taken between 12/14 and 12/18 with material included from HW 8-14	

(Tentative) Schedule for project submissions: (approximately one/week)

Due date	Contents
9/9	Getting data into SPSS and Statcrunch and Graphical Methods
9/16	Descriptive (Numerical) Statistics
9/23	Bivariate Analysis
9/30	Sampling and Experimentation considerations
10/7	Part 1 of final project
10/14	No assignment due
10/28	Survey and Confidence intervals
11/4	Confidence Intervals part 2
11/11	Hypothesis testing for one sample
11/18	Hypothesis testing part 2
11/25	Statistical significance in publications
12/2	No Assignment Due
12/11	Project due

The project submission assignments will be submitted to Canvas and graded by the TA. Please do not ask the TA to extend the due date or take late work.