UNIVERSITY OF KENTUCKY

New Course Report

4/13/2015 7:50:50 AM

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1. General Information

1a. Submitted by the College of: ARTS &SCIENCES

Date Submitted: 4/1/2015

1b. Department/Division: Statistics

1c. Contact Person

Name: Dr. Constance Wood

Email: cwood@uky.edu

Phone: 257-6115

Responsible Faculty ID (if different from Contact)

Name:

Email:

Phone:

1d. Requested Effective Date: Specific Term/Year [1] Fall/2016

1e. Should this course be a UK Core Course? No

2. Designation and Description of Proposed Course

2a. Will this course also be offered through Distance Learning?: Yes [4]

2b. Prefix and Number: STA 649

2c. Full Title: Design of Experiments

2d. Transcript Title: Design of Experiments

2e. Cross-listing:

2f. Meeting Patterns

LECTURE: 4

2g. Grading System: Letter (A, B, C, etc.)

2h. Number of credit hours: 4

2i. Is this course repeatable for additional credit? No

If Yes: Maximum number of credit hours:

If Yes: Will this course allow multiple registrations during the same semester?

2j. Course Description for Bulletin: Statistics (STA) 649 is an introduction to the principles of experimental design. Many statistics courses are taught from the perspective of analyzing data that has already been collected. However, problems that occur at the analysis stage (e.g., violations of assumptions, too small of sample, etc.) could have been avoided if the experimenter had consulted a statistician before the experiment was conducted and the data collected. This course will introduce common experimental designs so that when the data are collected, the aforementioned shortcomings are avoided. The course will provide equal treatment to both the conceptualization of the designs and the analysis of the subsequent experiment.

2k. Prerequisites, if any: STA 647, STA 648, and admission to the Master of Applied Statistics program or permission of the instructor.

2l. Supplementary Teaching Component:

3. Will this course taught off campus? No

If YES, enter the off campus address:

4. Frequency of Course Offering: Spring,

Will the course be offered every year?: Yes

If No, explain:

5. Are facilities and personnel necessary for the proposed new course available?: Yes

If No, explain:

6. What enrollment (per section per semester) may reasonably be expected?: 20

7. Anticipated Student Demand

Will this course serve students primarily within the degree program?: Yes

Will it be of interest to a significant number of students outside the degree pgm?: No

If Yes, explain:

8. Check the category most applicable to this course: Relatively New – Now Being Widely Established,

If No, explain:

9. Course Relationship to Program(s).

a. Is this course part of a proposed new program?: Yes

If YES, name the proposed new program: Master of Applied Statistics

b. Will this course be a new requirement for ANY program?: Yes

If YES, list affected programs: Master of Applied Statistics

10. Information to be Placed on Syllabus.

a. Is the course 400G or 500?: No

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: Yes

Distance Learning Form

Instructor Name: Dr. Constance Wood

Instructor Email: cwood@uky.edu

Internet/Web-based: Yes

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? The structure of the course is designed to include key elements of face-to-face classroom interaction while at the same time providing a range of flexibility associated with the structures of online education and distance learning. Highlights include: •Providing ways for students to access direct feedback to questions either through discussion groups or through weekly virtual "Meetings with the Expert." In these meetings (voice and chat synchronous, video asynchronous) students will have an opportunity to meet with the course instructors via Adobe Connect, Skype, or the best, similar method. We are currently testing alternatives. •Lectures that will be presented using the University's new lightboard. This creates a environment that is very similar to that in the classroom. •A clear weekly schedule with well-defined assignments and projects. •Periodic assessments with timely feedback.

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. See answer above. This course: •Provides ways for students to access direct feedback to questions either through discussion groups or through weekly virtual "Meetings with the Expert." •Contains a balanced mix of course-related recorded media. This will primarily include recorded lightboard presentations, voice-over presentations, and short animations. All such media is intended to create an environment that is very similar to that in the classroom. •Will always be a clear weekly schedule with well-defined assignments and projects. •Requires periodic assessments with timely feedback.

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. The nature of many of the assignments in the class is not really very conducive to plagiarism and a number of simple steps will help insure the integrity of the work. When objective assessments are used students will be required to use a lockdown browser. In general students may be asked to digitally sign a statement that then have neither given nor received inappropriate help on the assignment. In addition, the instructor may elect to have some answers submitted via video. We have used this technique in other of our online courses and it helps tremendously as a periodic check on how much the student really knows about the topics at hand. In addition, since this is an online course it would be very difficult for students to copy from one another. The course follows the standard UK policies for academic offenses which are spelled out in the syllabus.

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? Yes

If yes, which percentage, and which program(s)? Master of Applied Statistics (100%)

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? All students in this course will have access to UKIT and the Distance Learning Library and the contact information is available in the syllabus. The instructor of the course will hold regular weekly contact hours ("Meet the Expert") and the students can access the instructional team in a variety of ways. Moreover the instructional team will respond to all emails within one University of Kentucky-defined business day EST of receiving them.

6.How do course requirements ensure that students make appropriate use of learning resources? The course is set up to require a combination of reading, mathematical, communication and computing skills. Over the duration of this course, assignments will require students to utilize all of these learning resources to successfully complete them.

7.Please explain specifically how access is provided to laboratories, facilities, and equipment appropriate to the course or program. The computer hardware required to complete this course is standard equipment and common for most graduate students or professional. The software required is either open source software (meaning it is free to use and widely available), or available for free download for any registered U.K. student. Both the hardware and software requirements are clearly specified in the syllabus. There are special arrangements needed for using SAS on a Mac, but these will be communicated to affected students well in advance.

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/)? The course syllabus provides contact information for the Information Technology Customer Service Center to assist with the delivery and receipt of the course via the Canvas LMS, which is expected to be the official LMS for U.K. by the time the program starts. During the course we will also instruct students on other means of troubleshooting technical problems (course discussion groups, installation of R, etc.) that arise as part of their assignments.

9.Will the course be delivered via services available through the Distance Learning Program (DLP) and the Academic Technology Group (ATL)? YES

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. No applicable

10.Does the syllabus contain all the required components? YES

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

Instructor Name: Dr. Constance Wood

SIGNATURE|ASTRO11|Arnold J Stromberg|STA 649 NEW Dept Review|20150313

SIGNATURE|ACSI222|Anna C Harmon|STA 649 NEW College Review|20150401

SIGNATURE|ZNNIKO0|Roshan Nikou|STA 649 NEW Graduate Council Review|20150410

New Course Form

https://myuk.uky.edu/sap/bc/soap/rfc?services=

Open in full window to print or save

Generate R

Attachments:

Browse... Upload File

	ID	Attachment
Delete	4751	STA 649 Syllabus.pdf

First 1 Last

(*denotes required fields)

1. General Information

a. * Submitted by the College of: ARTS & SCIENCES Submission Date: 4/1/2015

b. * Department/Division: Statistics

c.

* Contact Person Name: Dr. Constance Wood Email: cwood@uky.edu Phone: 257-6115

* Responsible Faculty ID (if different from Contact) Email: Phone:

d. * Requested Effective Date: ○ Semester following approval OR ◉ Specific Term/Year [1] Fall/2016

e.

Should this course be a UK Core Course? ○ Yes ◉ No

If YES, check the areas that apply:

☐ Inquiry - Arts & Creativity	☐ Composition & Communications - II
☐ Inquiry - Humanities	☐ Quantitative Foundations
☐ Inquiry - Nat/Math/Phys Sci	☐ Statistical Inferential Reasoning
☐ Inquiry - Social Sciences	☐ U.S. Citizenship, Community, Diversity
☐ Composition & Communications - I	☐ Global Dynamics

2. Designation and Description of Proposed Course.

a. * Will this course also be offered through Distance Learning? ◉ Yes [1] ○ No

b. * Prefix and Number: STA 649

c. * Full Title: Design of Experiments

d. Transcript Title (if full title is more than 40 characters): Design of Experiments

e. To be Cross-Listed [2] with (Prefix and Number):

f. * Courses must be described by at least one of the meeting patterns below. Include number of actual contact hours[3] for each meeting pattern type.

4	Lecture		Laboratory[1]		Recitation		Discussion
	Indep. Study		Clinical		Colloquium		Practicum
	Research		Residency		Seminar		Studio
	Other	If Other, Please explain:					

g. * Identify a grading system:

◉ Letter (A, B, C, etc.)
○ Pass/Fail
○ Medicine Numeric Grade (Non-medical students will receive a letter grade)
○ Graduate School Grade Scale

h. * Number of credits: 4

i. * 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

j. * Course Description for Bulletin:

Statistics (STA) 649 is an introduction to the principles of experimental design. Many statistics courses are taught from the perspective of analyzing data that has already been collected. However, problems that occur at the analysis stage (e.g., violations of assumptions, too small of sample, etc.) could have been avoided if the experimenter had consulted a statistician before the experiment was conducted and the data collected. This course will introduce common experimental designs so that when the data are collected, the aforementioned shortcomings are avoided. The course will provide equal treatment to both the conceptualization of the designs and the analysis of the subsequent experiment.

k. Prerequisites, if any:

STA 647, STA 648, and admission to the Master of Applied Statistics program or permission of the instructor.

l. Supplementary teaching component, if any: ○ Community-Based Experience ○ Service Learning ○ Both

3. * Will this course be taught off campus? ○ Yes ◉ No

If YES, enter the off campus address:

4. Frequency of Course Offering.

a. * Course will be offered (check all that apply): ☐ Fall ☑ Spring ☐ Summer ☐ Winter

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

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:

Master of Applied Statistics

b. * Will this course be a new requirement for ANY program? ◉ Yes ○ No

If YES, list affected programs::

Master of Applied Statistics

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 add 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** attached.

Distance Learning Form

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

Introduction/Definition: For the purposes of the Commission on Colleges Southern Association of Colleges and Schools accreditation review, ***distance learning*** is defined as a fo 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 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 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 expe students utilizing DL (available at http://www.uky.edu/USC/New/forms.htm).

Course Number and Prefix: STA 649 Date: 3/9/2015

Instructor Name: Dr. Constance Wood Instructor Email: cwood@uky.edu

Check the method below that best reflects how the majority 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 Syllabus Guidelines, specifically the Distance Learning Considerations?

   The structure of the course is designed to include key elements of face-to-face classroom interaction while at the same time providing a range of flexibility associated with the structures of online education and distance

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, of student learning outcomes, etc.

   See answer above. This course:
   - Provides ways for students to access direct feedback to questions either through discussion groups or

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; academ policy; etc.

   The nature of many of the assignments in the class is not really very conducive to plagiarism and a number of simple steps will help insure the integrity of the work. When objective assessments are used students will be

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 f as defined above?

   Yes

   Which percentage, and which program(s)?

   Master of Applied Statistics (100%)

   *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 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 settin

   All students in this course will have access to UKIT and the Distance Learning Library and the contact information is available in the syllabus. The instructor of the course will hold regular weekly contact hours ("Meet the

Library and Learning Resources

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

   The course is set up to require a combination of reading, mathematical, communication and computing skills. Over the duration of this course, assignments will require students to utilize all of these learning resources to

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

   The computer hardware required to complete this course is standard equipment and common for most graduate students or professional. The software required is either open source software (meaning it is free to use and widely

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 r the course, such as the Information Technology Customer Service Center (http://www.uky.edu/UKIT/)?

   The course syllabus provides contact information for the Information Technology Customer Service Center to assist with the delivery and receipt of the course via the Canvas LMS, which is expected to be the official LMS for U.K.

9. Will the course be delivered via services available through the Distance Learning Program (DLP) and the Academic Technology Group (ATL)?

   ◉ 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 techn

   No applicable

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 Distance Learning programs (http://www.uky.edu/DistanceLearning) and Information Technology Customer Service Center (http://www.uky.edu/UKIT/Help/; 859-218-HELP).
    - 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:

- "If you have a documented disability that requires academic accommodations in this course, please make your request to the University Disability Resour The Center will require current disability documentation. When accommodations are approved, the Center will provide me with a Letter of Accommodatior details the recommended accommodations. Contact the Disability Resource Center, Jake Karnes, Director at 859-257-2754 or jkarnes@email.uky.edu."

- Specific dates of face-to-face or synchronous class meetings, if any.
- Information on Distance Learning Library Services (http://www.uky.edu/Libraries/DLLS)
  - Carla Cantagallo, 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

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

Instructor Name:
Dr. Constance Wood

Abbreviations: DLP = Distance Learning Programs ATG = Academic Technology Group Customer Service Center = 859-218-HELP (http://www.uky.edu/UKIT/Help)

~~Revised 8/09~~

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

[2] The chair of the cross-listing department must sign off on the Signature Routing Log.

[3] In general, undergraduate courses are developed on the principle that one semester hour of credit represents one hour of classroom meeting per week for a semester, exclusive of any laboratory meeting. La meeting, generally, represents at least two hours per week for a semester for one credit hour. (from SR 5.2.1)

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

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

Rev 8/09

Syllabus for STA 649:
Design of Experiments (4 credit hours)

University of Kentucky
College of Arts and Sciences (A&S)
Department of Statistics

Lecture:	Online (URL/TBA)
Meeting Time/Place:	Online (URL/TBA)
Instructor:	Constance L. Wood
Office Phone:	+1 859-257-1208
Office Address:	311 Multidisciplinary Science Building
Email:	cwood@email.uky.edu
Discussion Boards:	All content-related questions about the course – including homework questions – must be posted on the discussion boards. More information is provided below.
Visual Office Hours:	Mon/Wed/Fri, 11 am to 12 pm, EST and by appointment. The instructor will hold office hours via Adobe Connect. You may also contact the instructor by phone during office hours. Outside of office hours, please contact the instructor by e-mail only. The instructor will answer emails received within one University of Kentucky-defined business day EST of receiving them.

Prerequisite: STA 647, STA 648, and admission to the Master of Applied Statistics program or permission of the instructor.

Course Section Number: TBD
Course Website: TBD

Required Text: The following text is required for this course:

- R. O. Kuehl (1999). *Design of Experiments: Statistical Principles of Research Design and Analysis (Second Edition)*. Duxbury Press.

Topics in this course will have some corresponding readings out of the textbook. Occasionally, questions from the textbook will be assigned for homework. Additional course readings will also be made available on the Canvas Learning Management System.

Software: This course will primarily use SAS and occasionally the freeware, R, which is available for download. A number of editors for R are freely available, including RStudio. All submitted documents must be typeset using LaTeX. Text editors for LaTeX are also freely available, including Texmaker, TeXnicCenter, and TeXstudio.

Course Description: Statistics (STA) 649 is an introduction to the principles of experimental design. Many statistics courses are taught from the perspective of analyzing data that has already been collected. However, problems that occur at the analysis stage (e.g., violations of assumptions, too small of sample, etc.) could have been avoided if the experimenter had consulted a statistician before the experiment was conducted and the data collected. This course will introduce common experimental designs so that when the data are collected, the aforementioned shortcomings are avoided. The course will provide equal treatment to both the conceptualization of the designs and the analysis of the subsequent experiment.

Course Goals: The central goal of this course is for the student to develop a firm understanding of experimental design principles in order to properly collect data to answer scientific hypotheses of interest. This includes, but is not limited to:

1. Understand basic design principles and terminology.
2. Know how to work in simple comparative experimental contexts.
3. Develop a firm understanding of ANOVA for a variety of experimental designs.
4. Know how to implement a design when facing certain practical constraints.
5. Understand quantitative versus qualitative treatment levels.
6. Know how to calculate different multiple comparison procedures.
7. Become comfortable with experimental design procedures in SAS.

Student Learning Outcomes:

1. Demonstrate the ability to plan scientific experiments using a wide range of experimental designs.
2. Demonstrate how to perform ANOVA for a wide range of experimental designs.
3. Demonstrate knowledge about variance reduction techniques through appropriate design strategies, such as blocking.
4. Demonstrate how to interpret the appropriate sums of squares for identifying significant treatment effects.
5. Demonstrate how to design and analyze experiments including both quantitative and qualitative treatments.
6. Demonstrate how to optimize an underlying process using response surface designs.
7. Demonstrate how to perform post-hoc ANOVA testing using multiple comparisons.

Course Modules (Course Content): Specific course modules – each lasting between one and two weeks – to aid students in achieving the course goals include the following.

Module	Theme	Specific Topics
1	Basic Research Design Principles	• Experimental design terminology • Measurement vs. experimental units • Understanding variability among experimental units • Replicates
2	Single-Factor ANOVA	• Equivalence with regression models • Design matrices • Completely randomized designs (CRDs) • Deriving sums of squares
3	Treatment Comparisons	• Contrasts • Orthogonality • Multiple Comparisons
4	Multi-Factor ANOVA	• Two-factor ANOVA • General multi-factor ANOVA • Deriving Type I/II/III sums of squares • CRD with subsampling
5	Blocking	• Randomized complete block designs (RCBDs) • Latin squares

		• Incomplete block designs
6	Split-Plot Designs	• Whole plots vs. split plots • Split-split plot designs
7	Factorial Designs	• 2^k factorial designs • Confounding • Blocking in factorial designs
8	Fractional Factorial Designs	• Design resolution • Plackett-Burman designs
9	Analysis of Covariance (ANCOVA)	• Quantitative vs. qualitative treatments • Testing equality of slopes • Single-factor ANCOVA • Multi-factor ANCOVA
10	Response Surface Designs	• Revisiting polynomial regression • First-order response surface • Second-order response surface • Interactions

Final Grade: This course requires 10 (approximately) weekly homework assignments, 2 midterm exams, and a final exam. These are weighted as follows:

Homework Assignments:	40%
Midterm Exam #1:	20%
Midterm Exam #2:	20%
Final Exam:	20%

Grading Scale: Using the above weights, grades will be assigned according the following scale:

At least an A:	**90 – 100**
At least a B:	**80 – 89.9**
At least a C:	**70 – 79.9**
At least an E:	**0 – 69.9**

Homework: Homework assignments must be submitted online by their respective due dates (approximately weekly). All written work must be processed using LaTeX. All homework assignments and due dates will be posted on the course website. *No late homework will be accepted except in the case of a documented University Excused Absence.*

Exams: All exams will be a mixture of conceptual problems and data analysis questions. The questions will be open-ended. The exams will be posted on the course website for about 72 hours. Students will be able to access the exams anytime during this timeframe. Students will be expected to work on the exams during this timeframe and then submit their answers by the due date. During the exam, students are not allowed to discuss any questions with other individuals except the course instructor. All exam questions must be e-mailed directly to the course instructor and will be answered within half-a-day's time. All exams must be processed using LaTeX. *No exams will be accepted past the due date except in the case of a documented University Excused Absence.*

Exam Dates: Exam dates will be determined and announced at the beginning of the semester. The first midterm will occur immediately after Module 3, the second midterm will occur immediately after Module 6, and the final exam will occur after all modules are completed.

Discussion Boards: For each unit, a discussion board will be made available for students to post all course-related questions and to hold discussions about the material. Course-related questions about lecture material, homework, and reading assignments, should all be posted under the respective unit's discussion board. Do not e-mail course faculty with such questions. The purpose of the discussion boards is to foster interaction amongst students and faculty as well as to provide a sense of participating in a learning community. You are strongly encouraged to respond to questions posted by fellow students. Faculty will respond within one University of Kentucky-defined business day EST of the post. But, the discussion boards will be available 24 hours a day, 7 days a week for students to post questions and responses. Please follow these guidelines when posting to a discussion board:

- When posting a question, start a new thread and include a detailed subject line so other readers know what the post is about.
- When replying, make sure that you are replying to the correct thread.
- Please follow general etiquette rules when posting. For example, do not use all caps (that is considered SHOUTING).
- Use complete sentences and check your spelling, punctuation, and grammar when posting.
- For more handy tips see http://www.designingforlearning.info/services/writing/ecoach/tips/tip33.html.

Minimal Technology Requirements: This course is an online course and content, assignments and interactions rely on all students having computer hardware and software. While these are available on computers in student computer labs on UK's campus, most students will not be physically present and are responsible for gaining access themselves.

Hardware

- Computer, a newer model with a recent operating system and a hard drive with at least 2-5 GB of free space (more can be useful). Students are responsible for ensuring that their computer is smoothly operating (virus free, OS updates, etc.)
- Webcam and a headset/microphone for online interaction.
- A broadband internet connection.

Software

1. PDF reader, such as Adobe Acrobat Reader
2. Microsoft Office (Excel, Word, PowerPoint P available free through UK, https://download.uky.edu/)
3. R and SAS (available free through UK, https://download.uky.edu/)
4. Video Media player such as Windows Media Player, or Apple Quick Time
5. An Internet Browser supporting HTML 5, we recommend Chrome
6. In addition, as part of this course, students will be expected to install various software programs, device drivers, etc. More specific instructions will be provided as part of the course.

Tests

- **Check Your Computer** (https://www.whatismybrowser.com/) a quick test to see what browser version you are using, whether or not you have Java and JavaScript enabled, your version of Flash player, and several other items.

- **Speed Test** (http://www.speedtest.net/) Use this site to check what download speed you are getting. For videos to play, you need at least a 1 Mbps download speed. If higher, you will have less possibility of the videos having to stop and wait for more of the video to download.

Special Resources for Online Students: See UK's Distance Learning Webpage for a complete listing of services and contacts. http://www.uky.edu/DistanceLearning/ or call (859) 257-3377 or email distancelearn@lsv.uky.edu. Additional material will be distributed on online services from UK will be distributed as appropriate.

Distance Learning Library Services
The goal of Distance Learning Library Services is to provide access to information resources for the students who take classes through the Distance Learning Programs. Services include:

- Access to the University's circulating collections
- Document Delivery & Interlibrary Loan
- Research Assistance

Information on Distance Learning Library Services:
http://www.uky.edu/DistanceLearning/current/DLLS/

DL Librarian: Carla Cantagallo

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

Information Technology Customer Service Center & Distance Learning Programs
UKIT http://www.uky.edu/UKIT/ provides technical support to University of Kentucky students. If students are having difficulty with UK-related systems, (http://www.uky.edu/UKIT/Help/; 859-218-HELP).

Canvas Learning Management System
This course uses the Canvas Learning Management System or LMS. The course online system is available via Canvas at https://uk.instructure.com/ . Use your LinkBlue account to login and you will see this course under the courses menu (top of the page towards the left). This course - https://uk.instructure.com/courses/1096339 offers an orientation to Canvas and the Help button in the top right corner provides quick access to the guides, ask the community and the phone number for 24/7 support. Course materials (syllabus, readings, assignments, discussions, exams, etc.) will all be posted here and you are responsible for any changes in assignments, readings and due dates posted on the course blog.

Other Technical Complaints
If the student is having difficulty with their own computer or software, they will be responsible for resolving these as soon as possible.

Course Policies: Below are policies that will be strictly followed for this online course.

Submission of Assignments
Students will be assigned (approximately) weekly work assignments consisting of homeworks, exams, and discussions as laid out in the course schedule and the Canvas LMS. In the case of a discrepancy students should followed the assignment schedule specified in Canvas.

All work must be submitted through Canvas by no later than 11:59pm EST on the day they are due.

Late Assignments
All homework assignments and due dates will be posted on the course website. *No late homework will be accepted except in the case of a documented University Excused Absence.* Note: technical problems in the Canvas LMS can arise from time to time so be sure to submit assignments well before the 11:59 PM EST to allow for trouble-shooting.

Attendance Policy
While much (or all) of the work for this class does NOT require attendance at a specific time or time-space, students are expected to devote the time necessary to complete the assignments. In the case where excused absences from class activities becomes relevant, the course will follow the policies laid out by the UK Faculty Senate on excused absences (see below).

Excused Absences
Students need to notify the professor of absences prior to class when possible. S.R. 5.2.4.2 defines the following as acceptable reasons for excused absences: (a) serious illness, (b) illness or death of family member, (c) University-related trips, (d) major religious holidays, and (e) other circumstances found to fit "reasonable cause for nonattendance" by the professor.

If a student has excused absences in excess of one-fifth of the class contact hours for this course, a student shall have the right to petition for a "W", and the Instructor may require the student to petition for a "W" or take an "I" in the course. [SR 5.2.4.3F http://www.uky.edu/Faculty/Senate/rules_regulations/index.htm]

Students anticipating an absence for a major religious holiday are responsible for notifying the instructor in writing of anticipated absences due to their observance of such holidays no later than the last day in the semester to add a class. Information regarding dates of major religious holidays may be obtained through the religious liaison, Mr. Jake Karnes (859-257-2754).

Students are expected to withdraw from the class if more than 20% of the classes scheduled for the semester are missed (excused or unexcused) per university policy.

Verification of Absences
Students may be asked to verify their absences in order for them to be considered excused. Senate Rule 5.2.4.2 states that faculty have the right to request "appropriate verification" when students claim an

excused absence because of illness or death in the family. Appropriate notification of absences due to university-related trips is required prior to the absence.

Class Behavior and Civility
All students are expected to engage in courteous interaction with the instructor and other students. Academic and professional communication – particularly in online and asynchronous settings – require us to listen/read carefully and define our own ideas with clarity and tact. In particular, students are expected to keep this in mind during the use of the discussion board in this course.

Group Work and Collaboration
Group collaboration represents an important part of the learning in this course as often peer-to-peer interaction helps people understand material better and also prepares students for collaborative work in professional settings. Collaboration on homework is allowed and encouraged, BUT students MUST submit their own work and independently their logic and results to help develop their ability to problem solve. Individual submissions MUST be in the student's own writing and present their individual results. Moreover each student should be familiar and comfortable doing the assignments rather than simply relying on others for a solution.

Academic Integrity
Per university policy, students shall not plagiarize, cheat, or falsify or misuse academic records. Students are expected to adhere to University policy on cheating and plagiarism in all courses. The minimum penalty for a first offense is a zero on the assignment on which the offense occurred. If the offense is considered severe or the student has other academic offenses on their record, more serious penalties, up to suspension from the university may be imposed.

Plagiarism and cheating are serious breaches of academic conduct. Each student is advised to become familiar with the various forms of academic dishonesty as explained in the Code of Student Rights and Responsibilities. Complete information can be found at the following website: http://www.uky.edu/Ombud. A plea of ignorance is not acceptable as a defense against the charge of academic dishonesty. It is important that you review this information as all ideas borrowed from others need to be properly credited. Part II of Student Rights and Responsibilities (available online at http://www.uky.edu/StudentAffairs/Code/part2.html) states that all academic work, written or otherwise, submitted by students to their instructors or other academic supervisors, is expected to be the result of their own thought, research, or self-expression. In cases where students feel unsure about the question of plagiarism involving their own work, they are obliged to consult their instructors on the matter before submission.

When students submit work purporting to be their own, but which in any way borrows ideas, organization, wording or anything else from another source without appropriate acknowledgement of the fact, the students are guilty of plagiarism. Plagiarism includes reproducing someone else's work, whether it be a published article, chapter of a book, a paper from a friend or some file, or something similar to this. Plagiarism also includes the practice of employing or allowing another person to alter or revise the work which a student submits as his/her own, whoever that other person may be.

Students may discuss assignments among themselves or with an instructor or tutor, but when the actual work is done, it must be done by the student, and the student alone. When a student's assignment involves research in outside sources of information, the student must carefully acknowledge exactly what, where and how he/she employed them. If the words of someone else are used, the student must put quotation marks around the passage in question and add an appropriate indication of its origin.

Making simple changes while leaving the organization, content and phraseology intact is plagiaristic. However, nothing in these Rules shall apply to those ideas which are so generally and freely circulated as to be a part of the public domain (Section 6.3.1).

Please note: Any assignment you turn in might be submitted to an electronic database to check for plagiarism.

Accommodations due to disability

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.