

**1. General Information**

1a. Submitted by the College of: PUBLIC HEALTH

Date Submitted: 9/23/2013

1b. Department/Division: Dept Of Biostatistics

1c. Contact Person

Name: Johanna Wray

Email: jst227@uky.edu

Phone: 859-218-2097

Responsible Faculty ID (if different from Contact)

Name: Heather Bush

Email: heather.bush@uky.edu

Phone: 859-218-2080

1d. Requested Effective Date: Semester following approval

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

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FEB 4 2014

OFFICE OF THE  
SENATE COUNCIL**2. Designation and Description of Proposed Course**

2a. Will this course also be offered through Distance Learning?: No

2b. Prefix and Number: CPH 603

2c. Full Title: Biostatistics Concepts and Applications in Public Health

2d. Transcript Title: Biostatistics Concepts

2e. Cross-listing:

2f. Meeting Patterns

LECTURE: 45

2g. Grading System: Graduate School Grade Scale

2h. Number of credit hours: 3

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: This course covers topics relating to applications of biostatistics in public health. It provides a conceptual introduction to statistical methods commonly used in public health practice. Topics include data visualization, summary statistics, statistical testing, estimation, confounding, and an introduction to regression (linear, logistic, proportional hazards).

2k. Prerequisites, if any: MA 111 or equivalent

2l. Supplementary Teaching Component:

3. Will this course taught off campus? No

If YES, enter the off campus address:

4. Frequency of Course Offering: Summer,

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?: 50

7. Anticipated Student Demand

Will this course serve students primarily within the degree program?: No

Will it be of interest to a significant number of students outside the degree pgm?: Yes

If Yes, explain: [var7InterestExplain]

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?: No

If YES, name the proposed new program:

b. Will this course be a new requirement for ANY program?: No

If YES, list affected programs:

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:

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:

SIGNATURE|KRYSCIO|Richard J Kryscio|CPH 603 NEW Dept Review|20130923

SIGNATURE|BECKI|Rebecca L Flanagan|CPH 603 NEW College Review|20130924

SIGNATURE|JDLIND2|Jim D Lindsay|CPH 603 NEW HCCC Review|20131018

SIGNATURE|ZNNIKO0|Roshan N Nikou|CPH 603 NEW Graduate Council Review|20140204

Courses	Request Tracking
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## New Course Form

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

[Open in full window to print or save](#)

Generate R

Attachments:

Upload File

	ID	Attachment
Delete	2268	CPH 603 Concepts syllabus.pdf

1

Select saved project to retrieve...

(\*denotes required fields)

## 1. General Information

- a. \* Submitted by the College of:  Submission Date:
- b. \* Department/Division:
- c.
- |   |              |   |                     |
|---|--------------|---|---------------------|
| * Contact Person Name:                                | Johanna Wray | Email: <a href="mailto:jst227@uky.edu">jst227@uky.edu</a>             | Phone: 859-218-2097 |
| * Responsible Faculty ID (if different from Contact): | Heather Bush | Email: <a href="mailto:heather.bush@uky.edu">heather.bush@uky.edu</a> | Phone: 859-218-2080 |
- d. \* Requested Effective Date:  Semester following approval OR  Specific Term/Year
- e. Should this course be a UK Core Course?  Yes  No
- If YES, check the areas that apply:
- |   |   |
|---|---|
| <input type="checkbox"/> Inquiry - Arts & Creativity      | <input type="checkbox"/> Composition & Communications - II      |
| <input type="checkbox"/> Inquiry - Humanities             | <input type="checkbox"/> Quantitative Foundations               |
| <input type="checkbox"/> Inquiry - Nat/Math/Phys Sci      | <input type="checkbox"/> Statistical Inferential Reasoning      |
| <input type="checkbox"/> Inquiry - Social Sciences        | <input type="checkbox"/> U.S. Citizenship, Community, Diversity |
| <input type="checkbox"/> Composition & Communications - I | <input type="checkbox"/> Global Dynamics                        |

## 2. Designation and Description of Proposed Course.

- a. \* Will this course also be offered through Distance Learning?  Yes  No
- b. \* Prefix and Number:
- c. \* Full Title:
- d. Transcript Title (if full title is more than 40 characters):
- e. To be Cross-Listed <sup>2</sup> with (Prefix and Number):
- f. \* Courses must be described by at least one of the meeting patterns below. Include number of actual contact hours<sup>3</sup> for each meeting pattern type.
- |   |  |                                 |                                 |
|---|--|---------------------------------|---------------------------------|
| <input type="text" value="45"/> Lecture | <input type="text"/> Laboratory <sup>1</sup>   | <input type="text"/> Recitation | <input type="text"/> Discussion |
| <input type="text"/> Indep. Study       | <input type="text"/> Clinical                  | <input type="text"/> Colloquium | <input type="text"/> Practicum  |
| <input type="text"/> Research           | <input type="text"/> Residency                 | <input type="text"/> Seminar    | <input type="text"/> Studio     |
| <input type="text"/> Other              | If Other, Please explain: <input type="text"/> |                                 |                                 |
- g. \* Identify a grading system:  Letter (A, B, C, etc.)  Pass/Fail  Graduate School Grade Scale
- h. \* Number of credits:
- 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:

This course covers topics relating to applications of biostatistics in public health. It provides a conceptual introduction to statistical methods commonly used in public health practice. Topics include data visualization, summary statistics, statistical testing, estimation, confounding, and an introduction to regression (linear, logistic, proportional hazards).

## k. Prerequisites, if any:

MA 111 or equivalent

l. Supplementary teaching component, if any:  Community-Based Experience  Service Learning  Both3. \* 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? 50

## 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:

Students in medical colleges (medicine, pharmacy, nursing, and health sciences) may elect to take this course as an introduction to biostatistics

## 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 for ANY program?  Yes  No

If YES, list affected programs:

## 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) identify additional assignments by the graduate students; and/or (ii) establishment of different grading criteria in the course for graduate students. (See SR

b.  \* The syllabus, including course description, student learning outcomes, and grading policies (and 400G-/500-level grading differentiation if applicable above) are attached.

- Courses are typically made effective for the semester following approval. No course will be made effective until all approvals are received.
- The chair of the cross-listing department must sign off on the Signature Routing Log.
- 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. Laboratory meeting, generally, are two hours per week for a semester for one credit hour. (from SR 5.2.1)
- You must also submit the Distance Learning Form in order for the proposed course to be considered for DL delivery.
- In order to change a program, a program change form must also be submitted.

Rev 8/09

Submit as New Proposal    Save Current Changes

**UNIVERSITY OF KENTUCKY  
COLLEGE OF PUBLIC HEALTH**

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**Course Syllabus**  
**CPH 603-001 Biostatistics Concepts and Applications in Public Health**  
**Spring 2013**

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**Location:**  
**Times: Tuesday 3:30-6:00**

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**Contact information**

Instructor: Heather M Bush  
College of Public Health  
725 Rose Street Rm 301

Telephone: 859-218-2080

E-mail: (Preferred) heather.bush@uky.edu

Office Hours: By Appointment

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**Course description**

CPH 603 covers topics relating to applications of biostatistics in public health. It provides a conceptual introduction to statistical methods commonly used in public health practice. Topics include data visualization, summary statistics, statistical testing, estimation, confounding, and an introduction to regression (linear, logistic, proportional hazards).

**Course prerequisites**

Quantitative foundations, MA111, or equivalent

**Learning objectives:**

To introduce students to the uses of biostatistics through public health applications  
To identify, create, and present appropriate numerical and graphical summaries specific for different types of data  
To identify appropriate statistical tests for comparisons in one or multiple samples  
To provide correct interpretations in testing and estimation paradigms  
To understand the use of different regression methods for  
(a) Investigating the association of risk factors and outcomes  
(b) Controlling for confounding  
To be able to critically evaluate study design, statistical analysis, and statistical information in published materials

**Course goals:**

To provide a conceptual and public-health focused introduction to biostatistics  
To introduce concepts of estimation, inference, and regression in the context of public health applications  
To increase statistical literacy and thinking

### **Tentative Schedule of Topics**

<b>1/15/2013</b>	<b>Overview of statistical principles</b> Summarizing
<b>1/22/2013</b>	Estimating Making inferences Study planning
<b>1/29/2013</b>	<b>Making comparisons with continuous outcomes</b> Numerical and graphical summaries
<b>2/5/2013</b>	One-group studies Two-group studies
<b>2/12/2013</b>	Multiple-group studies Nonparametric methods Study planning
<b>2/19/2013</b>	<b>Associations and regression with continuous outcomes</b> Correlation Simple linear regression
<b>2/26/2013</b>	Confounding Study planning <i>Midterm Project Due</i>
<b>3/5/2013</b>	<b>Making comparisons with categorical outcomes</b>
<b>3/19/2013</b>	One-group studies Multiple group studies
<b>3/26/2013</b>	Study planning
<b>4/2/2013</b>	<b>Confounding, effect modification, and logistic regression</b> Dichotomous outcomes
<b>4/9/2013</b>	Stratified and adjusted odds ratios Study planning
<b>4/16/2013</b>	<b>An introduction to count outcomes</b>
<b>4/23/2013</b>	<b>An introduction to time to event outcomes</b>
<b>4/30/2013</b>	<i>Final project due</i>

### **Textbooks (Optional)**

HM Bush. Biostatistics: An Applied Introduction for the Public Health Practitioner. Delmar/Cengage 2012.

### **Course requirements and evaluation**

The course will consist of lecture, which will utilize active learning and small group discussion, opportunities to interpret results (verbally and in writing) from statistical analyses and published works.

Course grades will be based upon evaluation of the following activities:

**Reading Portfolio (40%)** The reading portfolio (electronic) will consist of all papers reviewed (selected by the instructor and by the student). Assignments associated with each reading as well as a summary of relevant discussions will be included with each paper. Due at midterm and final examination dates.

**Homework Assignments (20%)** Assignments will be given to reinforce material presented in class and recitation labs. Assignments may be completed individually or within a small group.



**Projects (40%)** Developing the skills to utilize biostatistics in public health applications and research requires the ability to communicate statistical ideas. To further develop statistical literacy in public health, students will be expected to complete projects which involve the application of biostatistics concepts to public health problems. Since many of these public health problems are tackled using team science, it is necessary for students to practice statistical communication (written and verbal) within a team setting. To facilitate this students are encouraged to complete projects within groups (no larger than 3 students per group). Projects will consist of interpreting data using statistical methods discussed in class and presenting the statistical information in a written report.

*Mid-term project (20%) and final project (20%).*

### **Grading Scale**

100 – 90 = A

89 – 80 = B

79 – 70 = C

0 – 69 = E

### **Instructor expectations**

1. I expect you to actively participate in the discussions. This is not the type of class where you can “sit back and listen.”
2. I expect you to complete all assignments and readings on time.
3. I expect you to submit papers using proper English grammar, syntax, and spelling. You are encouraged to use spell check and grammar check prior to submitting your written work. The Writing Laboratory is available to anyone who may need assistance. Grammar, syntax, and spelling will account for 10% of the grade for written work.
4. I expect that you will ask questions when you are confused or need a little more explanation.
5. I expect you to share in the responsibility for making this course an enjoyable and beneficial learning experience.

### **Public Health Competencies**

1. Apply the basic concepts of probability, random variation, and commonly used probability distributions.
2. Apply and interpret common univariate and multivariate statistical methods for inference.
3. Recognize the assumptions and limitations of common statistical methods and choose appropriate approaches for analysis.
4. Develop written and oral presentations based on statistical analyses for both public health professionals and educated lay audiences.

### **Academic honesty**

Academic honesty is highly valued at the University. You must always submit work that represents your original words or ideas. If any words or ideas used in a class assignment submission do not represent your original words or ideas, you must cite all relevant sources and make clear the extent to which such sources were used. Words or ideas that require citation include, but are not limited to, all hard copy or electronic publications, whether copyrighted or not, and all verbal or visual communication when the content of such communication clearly originates from an identifiable sources.

All incidents of cheating and plagiarism are taken very seriously at the University of Kentucky, and there are specific policies and procedures in place to prosecute them. See S.R. 6.3.0 (PDF) for the exact Senate Rules regarding academic offenses.

### **Accommodations**

If you have a documented disability that requires academic accommodations, please see me as soon as possible during scheduled office hours. In order to receive accommodations in this course, submit to me a Letter of Accommodation from the Disability Resource Center). If you have not already done so, please register with the Disability Resource Center for coordination of campus disability services available to students with disabilities. Contact Jake Karnes via email at [jkarnes@email.uky.edu](mailto:jkarnes@email.uky.edu) or by telephone 859-257-2754. You may also visit the DRC website for information on how to register for services as a student with a disability:  
<http://www.uky.edu/StudentAffairs/DisabilityResourceCenter/>

### **Religious Observances**

Students will be given the opportunity to make up work (typically, exams or assignments) when students notify their instructor that religious observances prevent the student from doing their work at its scheduled time. Students must notify the course instructor at least two weeks prior to such an absence and propose how to make up the missed academic work.

### **Inclement weather**

The University of Kentucky has a detailed policy for decisions to close in inclement weather. The snow policy is described in detail at [http://www.uky.edu/PR/News/severe\\_weather.htm](http://www.uky.edu/PR/News/severe_weather.htm) or you can call (859) 257-1754.

### **Late work policy**

Only students with university or instructor excused absences will be allowed to submit late work without penalty. Late work is defined as any work handed in after the scheduled due date and time. Work in this case refers to any assignment submitted to the instructor. It is the student's responsibility to make arrangements for determining and handing in missed work, preferably in advance, but no later than one week after the absence. Given the nature of the course, work submitted to the client needs to be completed on time. Late submissions to clients will be reflected in the consultation and professionalism part of the evaluation.

### **Excused absences policy**

Attendance, excused absences and make-up opportunities for this course will conform to the course policies established by the Office of Academic Ombud Services as found at [www.uky.edu/Ombud/policies.php](http://www.uky.edu/Ombud/policies.php)