AnyForm User: www.uky.edu
AnyForm Document: http://www.research.uky.edu/gs/GCInvestigatorReport.html
AnyForm Server: www.uky.edu (/www/htdocs/AnyFormTurbo/AnyForm.php)
Client Address: 172.21.72.67

College/Department/Unit: = MS in Epidemiology
Category:_   = New
Date_for_Council_Review: = November 13, 2008
Recommendation_is:_   = Approve
Investigator: = Brett Spear
E-mail_Address = bspear@uky.edu
1__Modifications: = None
2__Considerations: = This program is being developed in parallel with the new PhD program in Epidemiology and
Biostatistics. Students who complete the core coursework (33 credit hours of core courses, 6 credit hours of electives)
will be eligible for this degree. Students will also be required to carry out a master\'s thesis and pass an oral exam that
will be administered by the student\'s committee.
3__Contacts: = Discussed issues related to this and the accompanying PhD program with Dr. Kryscio.
4__Additional_Information: = There does not appear to be a plan A and plan B masters. It appears that students are
required to have a research component for the MS degree, although it states in the application that students who take the
courses for the PhD program but choose not to pursue their dissertation research could obtain this MS degree. One
question is whether there would be a research component for those who choose this path.

Overall, approval of this new program is recommended.

--
AnyForm/PHP3 0.1

AnyFormRandomSeqNo: 66075113

From:	Brothers, Sheila C
Sent:	Monday, September 22, 2008 8:42 AM
To:	LaRoche, Adrea S.
Subject:	FW: HCCC Transmittal - New Program: MS in Epidemiology
Attachments:	MS in Epidemiology Complete.pdf

Follow Up Flag:	Follow up
Flag Status:	Flagged

Categories:	Curricular Items

Office of the Senate Council
Phone: (859) 257-5872

From: Lindsay, Jim D.
Sent: Friday, September 19, 2008 2:48 PM
To: Nikou, Roshan; Jackson, Brian A
Cc: Brothers, Sheila C; Anderson, Heidi Milia; Flanagan, Rebecca; Alexander, Linda A; Tucker, Thomas C
Subject: HCCC Transmittal - New Progrram: MS in Epidemiology

September 19th, 2008

T R A N S M I T T A L
TO: Brian Jackson, Roshan Nikou
        Graduate Council
FROM: Jim Lindsay
        Health Care Colleges Council

At its September 16th 2008 meeting, the Health Care Colleges Council approved the following proposal and is now forwarding it to the Graduate Council to approve:

College of Public Health

New Program: MS in Epidemiology

Attached are the materials to implement the requested action.

cc: Linda Alexander
      Becki Flanagan
      Thomas Tucker
      Shelia Brothers
      Heidi Anderson

Jim Lindsay
Health Care Colleges Council Coordinator
Associate Provost for Faculty Affairs Office
University of Kentucky, 205 Frazee Hall
Lexington, KY 40506-0031 Ph. (859) 323.6638
www.uky.edu/Provost/AcademicCouncil/council.php

UK

UNIVERSITY OF KENTUCKY

Dream · Challenge · Succeed

COLLEGE OF PUBLIC HEALTH

MEMORANDUM

TO: **Health Care Colleges Council**

FROM: **Linda A. Alexander, EdD**
            Associate Dean for Academic Affairs

SUBJECT: **New Program Proposal – Master of Science in Epidemiology**

DATE: **August 28, 2008**

It is the intention of the College of Public Health to begin offering a new degree program – a Master of Science in Epidemiology.

In November 2006, our college applied to the Kentucky Council for Post-Secondary Education for permission to develop a proposal for the PhD in Epidemiology and Biostatistics. The CPE sent Provost Subbaswamy notification that the CPE granted permission for us to develop the program in December.

It was suggested to us that the MS in Epidemiology be developed as a companion program to the PhD in Epidemiology and Biostatistics to allow students an option in circumstances where the decision to discontinue the PhD program is made. Practicing MDs, DMD, PharmDs, and other health professionals who are interested in conducting population-based research and will be the targeted audience for the degree; Master's-level graduates in the areas of psychology, computer science, engineering, business, biology, or chemistry may also find the program an attractive addition to their formal academic training.

After the full proposal was completed, it was reviewed and approved by the Academic Affairs Committee and the Faculty Council, according to our college's established bylaws.

Further information about this course can be obtained by contacting Dr. Thomas Tucker at 219-0773 ext 225 or via email at tct@kcr.uky.edu.

Office of the Dean
121 Washington Ave., Suite 112 · Lexington Kentucky 40536-0003
(859) 218-2247 · fax (859) 323-5698
www.mc.uky.edu/PublicHealth
An Equal Opportunity University

UNIVERSITY SENATE REVIEW AND CONSULTATION SUMMARY SHEET

Proposal Title: **Master of Science in Epidemiology**

Proposal Contact: Dr. Thomas Tucker, Department of Epidemiology
College of Public Health
121 Washington Avenue, Room 200
CAMPUS 0003
Phone: 219-0773 ext 225
Email: tct@kcr.uky.edu

Becki Flanagan, Academic Affairs
218-2092   becki@uky.edu

Instruction: To facilitate the processing of this proposal please identify the groups or individuals reviewing the proposal, identify a contact person for each entry, provide the consequences of the review (specifically, approval, rejection, no decision and vote outcome, if any) and please attach a copy of any report or memorandum developed with comments on this proposal.

Reviewed By	Contact person	Consequences of Review	Date of Proposal Review	Review Summary Attached?
Academic Affairs Committee	Marta Mendiondo, Chair	Approved	6/17/08	Yes
Faculty Council	Glyn Caldwell, Chair	Approved	7/17/08/08	Yes
Office of Academic Affairs	Linda Alexander, Associate Dean	Approved	8/28/08	Yes

Heidi Anderson   Approved   9/16/08   ---

HCCC

U O K

UNIVERSITY OF KENTUCKY

Dream · Challenge · Succeed

> **COLLEGE OF PUBLIC HEALTH**

MEMORANDUM

TO: **Health Care Colleges Council**

FROM: **Linda A. Alexander, EdD**
              Associate Dean for Academic Affairs

SUBJECT: **New Program Proposal – Master of Science in Epidemiology**

DATE: **August 28, 2008**

It is the intention of the College of Public Health to begin offering a new degree program – a Master of Science in Epidemiology.

In November 2006, our college applied to the Kentucky Council for Post-Secondary Education for permission to develop a proposal for the PhD in Epidemiology and Biostatistics. The CPE sent Provost Subbaswamy notification that the CPE granted permission for us to develop the program in December.

It was suggested to us that the MS in Epidemiology be developed as a companion program to the PhD in Epidemiology and Biostatistics to allow students an option in circumstances where the decision to discontinue the PhD program is made. Practicing MDs, DMD, PharmDs, and other health professionals who are interested in conducting population-based research and will be the targeted audience for the degree; Master's-level graduates in the areas of psychology, computer science, engineering, business, biology, or chemistry may also find the program an attractive addition to their formal academic training.

After the full proposal was completed, it was reviewed and approved by the Academic Affairs Committee and the Faculty Council, according to our college's established bylaws.

Further information about this course can be obtained by contacting Dr. Thomas Tucker at 219-0773 ext 225 or via email at tct@kcr.uky.edu.

Office of the Dean
121 Washington Ave., Suite 112 · Lexington Kentucky 40536-0003
(859) 218-2247 · *fax* (859) 323-5698
www.mc.uky.edu/PublicHealth
An Equal Opportunity University

TO: Linda Alexander
           Associate Dean for Academic Affairs

CC: Marta Mendiodo
           Chair, Academic Affairs Committee

CC: Richard Kryscio
           Thomas Tucker

FROM: Glyn G. Caldwell
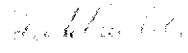   Chair, Faculty Council

DATE: July 17, 2008

SUBJECT: Approval of the Master of Epidemiology Degree Program

On July 17, 2008 the Faculty Council of the College of Public Health approved
the Master of Epidemiology Degree Program.

MEMORANDUM

To: Faculty Council

From: Marta S. Mendiondo
        Chair, Academic Affairs Committee

Date: June 17, 2008

The Academic Affairs committee approved the new program request for the MS in
Epidemiology.

REQUEST FOR A NEW PROGRAM

Degree title: Master of Science (MS) in Epidemiology

Major title: Epidemiology   Option: N/A   Major code in SIS:

Primary College: College of Public Health

CIP Code: 26.1309 Epidemiology

Accrediting Agency: N/A

Contacts:

> **Thomas C. Tucker tct@kcr.uky.edu   219-0773 x225**

I.   Abstract

The proposed Master of Science (MS) program in epidemiology is intended to prepare professionals for mid-level careers in conducting population-based research and clinical trials. The MS program in epidemiology in the College of Public Health is a unique program which strongly emphasizes the acquisition of applied skills in the complementary fields of epidemiology and biostatistics, as well as the theoretical foundations of these disciplines. Graduates of this program will be prepared to work as epidemiologists in academia, government, and industry. In contrast to other masters programs in epidemiology, this program will leverage the unique collaborative environment between the departments of Biostatistics and Epidemiology in the College of Public Health. The essentially strong cross-training and mentoring nature of the program is intended to develop researchers who will be skilled in designing and conducting epidemiologic studies, analyzing data, and interpreting the results from a variety of designs and databases in the public health and medical research domains.

This is intended to be an integrative masters program with a strong emphasis on quantitative and methodologic skills development. This two year program follows the identical course work requirements of the PhD program in epidemiology and biostatistics. Consequently, this degree program can provide a terminal master's degree in epidemiology for those students who have successfully completed the course work for the PhD program but who choose not to pursue a dissertation, fail in the completion of the oral and/or written examinations at a level required for doctoral work, or for personal reasons decide not to continue the program. The MS program will be strong preparation for doctoral studies in epidemiology, biostatistics, or other public health disciplines (health behavior, health services management, environmental health). Students will be required to undertake a master's thesis, following the completion of required course work and examinations, and defend the thesis in an oral examination.

AUDIENCE

The program will prepare students for research oriented careers in population based studies and clinical research studies including clinical trials. The target audience for this program will include students with an appropriate prior bachelor's or masters degree along with prior mathematical training to include univariate differential and integral calculus. In addition, practicing health care professionals (MDs, DMDs, PharmDs, etc) who are interested in pursuing independent research careers will be targeted for the program. There is a severe shortage of masters and doctoral level graduates with training in epidemiology and biostatistics. This program is unique since it requires students to show proficiency in both areas.

NEED

There is an increasing need for research-oriented health professionals who will be qualified to conduct population-based research and clinical trials in the next several decades. Epidemiologists with strong quantitative skills will be in demand as the need for researchers with an understanding of the new developments in the biostatistics, data management, and clinical trials research will increase. Scientifically trained (subject matter) data analysts who can address the issues in conducting studies which include large amounts of complex data from longitudinal studies, multi-center trials, registries, and genomics databases will be needed at the mid career and doctoral level. The neurosciences, genetics, molecular biology, surveillance, and computational biology are expected to be growth areas which will demand the complex, integrated skill set of a new group of professionals.

The students in this program will be required to have a minimum residence requirement of 2 full semesters of graduate level coursework. All requirements must be completed within 8 years of undertaking the program. All students will be required to pass a written examination at the master's level before proceeding with the master's thesis. The thesis research will need to be an original scientific project using either primary or secondary data with a population-based (epidemiologic) or clinical trials focus. The thesis must be developed under the direction of a full or an associate member of the Graduate Faculty. It must be approved by the thesis director, the Director of Graduate Studies, the Examination Committee and the Graduate School, and must be in conformity with instructions prepared by the Graduate School entitled, Instructions for the Preparation of Theses and Dissertations. (Copies of this document are available from the Graduate School.)The scope of the thesis shall demonstrate independence, mastery of research skills, and thoughtful reflection of the results in accordance with guidelines given in the CPH student handbook and the rules of the graduate school.

The completion of the thesis will require the formation of a master's thesis committee. No fewer than 3 persons shall constitute the thesis committee. One of the members

must be a full member of the graduate school and at least 2 of the 3 members must be faculty from the Departments of Epidemiology in the College of Public Health.

II.   Program Description

Competencies
The following competencies for the MS in Epidemiology are based on the core courses for the degree:

1. Understand the interface between biostatistics and epidemiology
2. Demonstrate advanced proficiency to apply concepts and methods from these disciplines jointly.
3. Demonstrate the ability to review and critically evaluate the literature in a substantive area of research, be able to identify gaps in knowledge and be able to formulate original research hypotheses or statements
4. Evaluate the strengths and limitations of epidemiologic reports and research articles.
5. Draw appropriate inferences from research data.
6. Communicate research results orally and in writing to lay and professional audiences.
7.   Demonstrate an understanding of concepts of probability and statistical inference as they apply to problems in public health.
8. Demonstrate proficiency in using computing tools commonly encountered in epidemiology and biostatistics.
9. Understand the principles of various epidemiologic study designs and be able to calculate the appropriate epidemiologic measures for most typical designs.
10. Become proficient at and be able to evaluate the strengths and limitations of advanced designs and statistical analysis methods including multivariate linear models, generalized linear models, longitudinal models, mixed effects models, and survival models both parametric and nonparametric.
11. Understand the principles of chronic and infectious disease epidemiology.
12. Demonstrate an understanding of research methods used in epidemiology and biostatistics.
13. Demonstrate knowledge of the public health system in the commonwealth and the country.

Curriculum

Students will complete a minimum of 39 credit hours of study (see attached outline in Appendix 1). The core curriculum consists of 11 core courses comprising 33 credit hours. In addition to the core courses, students in the MS program will be required to complete two additional elective courses totally six credit hours.

A comprehensive examination is given between the fall and spring semesters of the second year. Students for the MS must pass this examination at a pass level commensurate for the masters program. There will be two opportunities to take this exam. Students are also required to complete a master's thesis and defend it in an oral examination of their faculty committee.

Pre-requisites
Bachelor's Degree
Calculus: Univariate Differential and Integral Calculus
One course in Life Sciences
STA 580: Biostatistics 1

Core curriculum (33 hours)

BST 675   Biometrics I (4) This course, the first of a two-semester sequence in biometrics, introduces probability, discrete random variables, continuous random variables, joint distributions, and sampling distributions.

BST 676   Biometrics II (4) This course, the second of a two-semester sequence in biometrics, introduces techniques for constructing and evaluating point estimators, hypothesis testing procedures, and interval estimators.

CPH 605   Epidemiology (3) In this course students are taught the principles and methods of epidemiologic investigations, research methodology, and statistical integration. Major topics include etiologic factors of disease and injury, the distribution of health problems within populations, levels of prevention, and the concept of risk. The design of retrospective, cross-sectional and prospective studies are examined to illustrate odds ratio, relative risk, life tables, and person-years. Students are required to complete and submit a research proposal, present a topic paper, and serve as a co-facilitator for an article discussion.

CPH 712   Advanced Epidemiology (3) This course provides students with the understanding of advanced issues in the design, analysis, and interpretation of epidemiologic studies. The course text and associated readings will focus on study designs and the methodologic approaches to addressing bias, confounding, and error in the design of population-based health research. The development of a systematic approach for evaluating evidence from epidemiologic studies as it relates to demonstrating causality will be emphasized. Focusing on study design, measures of associations, confounding, interaction, sources of bias and error, the student will gain an understanding of epidemiology and its role in the medical and public health sciences.

BST 639 Computing Tools (3) Introduction to statistical and epidemiologic software technologies commonly used for the collection, management, and analysis of data. This is a core course for the PhD in Epidemiology and Biostatistics. It is designed to prepare first year students for further coursework and dissertation research.

BST 730 Advanced Regression (3) This course provides an introduction to theoretical methods and applications of linear and generalized linear models. Regression methods for normally distributed outcomes will provide a discussion of experimental design, design matrices, and modes of parametric inference for the linear model. Students will learn to apply these concepts in sophisticated data analysis where they will implement tools for model building and selection, variable selection, and handling categorical predictors, confounders and interactions. Additionally, students will learn polynomial regression and flexible alternatives such as weighted least squares and robust, ridge and nonparametric regression. Regression methods for non-normal outcomes (focusing on binomial and count data) will be covered in detail, providing students with foundational tools for understanding and implementing generalized linear models that are commonly used to analyze epidemiologic and public health data from various study designs including but not limited to cohort, case-control, and clinical trials.

BST 731 Time to Event Analysis (3) Survival distributions, Hazard functions, Origin of time, and types of censoring, Time to event analysis using Kaplan-Meier method, Life-table method, Accelerated failure time model, Logit model for discrete data, Complimentary log-log model, Maximum likelihood estimation, Tests for goodness-of-fit, Graphical methods, and residual and influence statistics., Proportional Hazards model, Partial likelihood, Time-dependent covariates, Cox model with non-proportional hazards, Left truncation and late entry into the risk set, Competing risks, Sample size and power, Time to event analysis with missing data.

BST 732 Longitudinal Data Analysis (3) This course presents statistical techniques for analyzing longitudinal studies and repeated measures experiments that occur frequently in public health, clinical trials, and outcomes research. This course will cover linear mixed models, generalized linear mixed models and an introduction to nonlinear models as they apply to the analysis of correlated data.

EPI 714 Epidemiologic Study Design (3) This course provides students with advanced course material relevant to the planning and execution of epidemiologic studies of various designs. The course will consider study

designs which employ routinely collected data on disease occurrence, such as would be undertaken in government agencies and health departments, and the classic etiologic study designs including the case-control, prospective cohort, retrospective cohort, nested case control, case-cohort, and case-crossover designs. The course will focus considerable attention on measurement methods and measurement error, borrowing examples from the subfields of epidemiology including occupational, cardiovascular, and social epidemiology. Given current interest on multilevel methods of analysis, the class will discuss approaches to the incorporation of designing multilevel studies. Finally, we will consider recent advances in experimental epidemiology with consideration of controlled community trials.

EPI 713   Infectious Disease Epidemiology (3) Emphasizes the epidemiological and microbiological methods used to study infectious diseases including new, emerging, and re-emerging diseases. Included are the history, epidemiologic concepts and tools needed to understand and investigate the maintenance, transmission, and effects of infectious disease in human populations.

CPH 701   Current Issues in Public Health (1) This seminar course will introduce MS and PhD students to the critical role of public health in protecting, maintaining, and improving the health of the population. Specific emphasis will be directed to the "Ten Essential Functions of Public Health" through weekly lectures, readings, and writing assignments. All five core areas of public health will be introduced

A Chronic Disease Epidemiology Course chosen from the ones below:

CPH 711   Chronic Disease Epidemiology (3) Provides students with an overview of the risk factors associated with the most common chronic diseases, data sources available about these diseases and epidemiologic theories, concepts and tools associated with these diseases.

CPH 616   Cardiovascular Epidemiology (3) Provides students with an overview of the risk factors associated with cardiovascular disease. Also teaches students about variations in the frequency of risk factors and in the rates of cardiovascular disease by characteristics of person, time and place.

CPH 718   Special Topics: Cancer Epidemiology (3)This course applies and integrates the principles and tools of epidemiology to the study of cancer. The course includes discussion of the burden of various kinds of cancer across the United States and the world by age, gender, and race/ethnicity, the underlying biology behind the development of cancer in humans, cancer surveillance, the epidemiology of various kinds of cancer by

category of major risk factors such as human behavior (e.g. smoking and alcohol use).

Electives (Two required)

Electives may be chosen by the student in consultation with the advisor and dependent on need.

List of Electives

BST 736   Applied Statistical Modeling for Medicine and Public Health (3) This course introduces some useful statistical models not typically encountered in the core courses of a master's or doctoral biostatistics curriculum. These include finite mixture models, nonparametric regression models, covariance-based models, and stochastic models.

BST 737   Missing Data Methodology for Public Health (3) This course surveys methods for analyzing data with missing observations. This includes methods for data missing completely at random including hot deck cold deck, mean substitution, and single imputation; methods for data missing at random including multiple imputation and weighted estimating equations and methods for data missing not at random including pattern mixture models, selection models, and shared random effects models.

BST 738   Analysis of Temporal Data in Public Health (3) This course surveys methods for analyzing public health data collected over time. Methods covered include smoothing time series data, the modeling of stationary time series for Gaussian, dichotomous, and case count responses, methods for detecting the clustering of disease over time, and methods for the surveillance of infectious diseases in real time.

BST 739   Bayesian Modeling in Biostatistics (3) This course provides an introduction to Bayesian ideas and data analysis applied to the biosciences. The course illustrates current approaches to Bayesian modeling and computation in biostatistics.

CPH 610   Injury Epidemiology (3) Describes the distribution and determinants for traumatic injury and poisonings, including both intentional and unintentional events. Topics include: sources of data, methodological approaches to studying injuries, evaluation of injury interventions, and the link between epidemiology and public health policy impacting injuries.

CPH 614   Managerial Epidemiology (3) Reviews the fundamental principles of epidemiology and teaches students how to apply these principles to the management of health service organizations.

CPH 616 Cardiovascular Epidemiology (3) Provides students with an overview of the risk factors associated with cardiovascular disease. Also teaches students about variations in the frequency of risk factors and in the rates of cardiovascular disease by characteristics of person, time and place.

CPH 617 Environmental and Occupational Epidemiology (3) Provides students with an understanding of occupational and environmental exposures and their associations with specific health effects, and with the application of epidemiologic concepts and methods to describe and analyze these associations. Combines lectures on exposure assessment, study design and methodological issues, as well as discussion and presentation of topics focused on specific outcomes and exposures.

CPH 662 Public Health Response to Terrorism & Disasters (3) Focuses on public health concepts, history, methods, planning and response preparedness in response to a Weapons of Mass Destruction (WMD) terrorist attack, in both the nation and Commonwealth of Kentucky. Will discuss how public health methods can be applied to response planning and preparedness for such a bioterroristic WMD attack and improve the public health and medical infrastructure for response to natural disasters. Public health response includes surveillance of disease and laboratory reports for evidence of WMD attack, as well as epidemiological review of suspicious cases of illness potentially related to biological or chemical weapons.

CPH 718 Special Topics: Decision-Making in Health and Medicine (3) This course applies decision science theory to healthcare decision making. It is intended for epidemiologists, managers, and health behaviorists who want to understand the process of rational decision-making. Topics include (1) managing uncertainty, (2) treatment decisions, (3) valuing healthcare outcomes, (4) diagnostic test decisions, (5) prevention and screening, (6) tests with multiple outcomes, (7) cost-effectiveness, cost-benefit, and cost-utility analysis, and (8) modeling events that reoccur over time.

CPH 718 Special Topics: Oral Health Epidemiology (3) This course describes the concepts and principles of oral health epidemiology. The purpose is to use epidemiology principles and concepts and apply them to oral health related questions. This is an advanced, 700 level course, and will be intense. Although basic and intermediate/ advanced principles of epidemiology, biostatistics and oral biology will be reviewed early in the course, students are expected to have good working knowledge of these subject areas. Students are not expected to have a background in dentistry, but their biology, math and critical thinking abilities are expected to be worthy of the level of this course. The course includes discussions of the theory and methods of epidemiology, biostatistics and biology, sociology and philosophy and their applications to oral health.

CPH 718   Special Topics: Cancer Epidemiology (3) This course applies and integrates the principles and tools of epidemiology to the study of cancer. The course includes discussion of the burden of various kinds of cancer across the United States and the world by age, gender, and race/ethnicity, the underlying biology behind the development of cancer in humans, cancer surveillance, the epidemiology of various kinds of cancer by category of major risk factors such as human behavior (e.g. smoking and alcohol use), endogenous/exogenous hormones, viruses, environmental/ occupational, and diet, and sources of data and methods for evaluating cancer screening, measuring the impact of risk factors, determining the incidence of cancer and cancer clusters, measuring patterns of care, and understanding the determinants of survival.

CPH 718   Special Topics: Cancer Molecular Epidemiology (3) This course will consist of lectures relating to the principles of molecular epidemiology, cancer prevention, and control. Lectures include: Biomarker Discovery using proteomic techniques, Cancer Screening, Genomics and Pharmacogenomics, Cancer susceptibility: Single Nucleotide Polymorphisms and DNA Damage and DNA Mismatch Repair Genes, Cancer Risk Assessment, Cancer Diagnosis and Prognosis, Cancer Theragenosis, and Transitional Studies: Biospecimens and Bioinformatics.

Residency Course
CPH 748   Residency Course (0 credit hour)

Evaluation of Program

III.   Resources

The Departments of Epidemiology and Biostatistics at the University of Kentucky have sufficient resources to initiate and maintain the proposed MS program in Epidemiology. Having recruited two new core faculty in 2006 (Drs. Browning and Chattopadhyay), the Department of Epidemiology now has six core faculty (the others are Drs. Caldwell, Fleming, Hopenhayn, and Tucker) who will be active in the proposed program. In an ordinary academic year, the six core faculty in the Department of Epidemiology can cover a maximum of approximately 18 courses. The net increase in the number of courses for which the Department of Epidemiology will be responsible in an ordinary academic year is approximately 3, so that the total number of courses for which the Department of Epidemiology will be responsible in an ordinary academic year is approximately 15. Three of the six core faculty in the Department of Epidemiology are currently tenured, ensuring that student advisory needs will be met.

IV: Academic Program Approval Checklist

Note: this is a graduate program meaning most of the questions raised in this part of the application are not applicable (N/A).

01: Are more Kentuckians ready for postsecondary education?

   A. Entrance requirements: Bachelor's Degree, Introductory statistics (STA 580 or equivalent), an undergraduate course in Life Sciences, two semesters of calculus.
   B. Transfer requirements: N/A
   C. Recruitment Plans: The target audiences for this program are primarily (i) undergraduates with a bachelors degree in mathematics, statistics, or the life sciences (ii) graduate students who intend to complete this program in route to PhD in Epidemiology and Biostatistics, (iii) master's level graduates from psychology, computer science, engineering, business, biology, or chemistry and (iv) professional degree students seeking a MS degree in Epidemiology. We will work with all regional universities in the state and surrounding states to ensure a smooth transition from relevant undergraduate programs to our MS program.

02: Are more students enrolling?

   A. Program demand: The demand for expertise in epidemiology/biostatistics at the master's level is especially critical for the Commonwealth of Kentucky, which consistently ranks low in national standings for many adverse health events. In the last twenty years, the demand for epidemiologists has grown dramatically, as opportunities to participate in the design, conduct, and analysis of biomedical and public health research projects have continued to expand. Currently, there is not an MS program in epidemiology in the Commonwealth and therefore we expect a strong demand for this program from among a broad array of in-state and national and international students who are quantitatively trained at the undergraduate level and who are interested in an epidemiology with an emphasis on applied analytic skills development.
   B. Detailed recruiting plans: See 0.1.c above
   C. Equity: In accordance with University of Kentucky policy, this program will provide opportunities to people regardless of economic or social status and will not discriminate on the basis of race, color, ethnic origin, national origin, creed, religion, political belief, sex, sexual orientation, marital status, age, veteran status, or physical or mental disability (University of Kentucky, Office of Institutional Equity and Equal Opportunity, http://www.uky.edu/EVPFA/EEO/).

03: Are more students advancing through the system?

   A. Time to graduation: 2 years
   B. Reason for offering the program: Program is being offered to fill demand for MS students in Epidemiology and to provide a terminal master's degree for student in

the PhD program in Epidemiology and Biostatistics who complete course and written exam requirements but who do not fulfill the dissertation research requirement.

C. Delivery. Some elective courses may be delivered through distance learning.

D. Collaborative Efforts. The departments of Epidemiology and Biostatistics are collaborating together with the College of Public Health to develop this program.

04. Are we preparing Kentuckians for life and work?

A. How does the program prepare Kentuckians for life and work? Graduates from this program will be able to fill positions in academia, government, and industry at high levels of professional influence. Graduates who have a strong skill set in research methods, study design, and advanced statistical analysis, with a substantive focus in areas of environmental, genetic, social, injury, or infectious disease disciplines, will be well suited for higher level research opportunities. This program is congruent with efforts to advance the University of Kentucky to a top 20 research institution.

B. Accreditation expectations: This MS program in epidemiology will be subject to the accreditation requirements of the College of Public Health and the Graduate School at the University of Kentucky. The program will be reviewed for productivity, resource utilization, placement of the graduates, and comparability with (related) peer program in the nation.

C. Are there licensure, certification, or accreditation requirements for graduates of this program? This program will be accountable to the accreditation requirements of MS programs in the Graduate School at the University of Kentucky.

D. Expected degree productivity: It is expected that 3-5 students will initially be admitted to the program in its first year of initiation as part of the PhD program in Epidemiology and Biostatistics. These students are expected to complete the program of study in 2 years. After the initial 1-2 years of experience with the program, the faculty will have a better idea of the programs success. It is anticipated that students will independently be admitted to the MS program in Epidemiology following this initial recruitment into the PhD program.

05. Are Kentucky's communities and economy benefiting?

A. External Advisory Groups: The College of Public Health at the University of Kentucky has an external advisory group representing public health leaders throughout the state. The Advisory Committee and other external health care groups have consistently recognized the lack of individuals in Kentucky who are trained in both Epidemiology and Biostatistics.

B. Employment expectations: The demand for individuals with training in Epidemiology and Biostatistics at the graduate level is intense. There is a shortage of individuals with this specific training nationally and this shortage is particularly acute in Kentucky. Anyone completing the proposed degree will be highly sought after for their unique and important knowledge and skills.

C. Other benefits. One of the most significant problems facing Kentucky communities is unhealthy populations. These problems have been well documented. People living in Kentucky have higher rates of cancer (specifically lung cancer, colon cancer, and cancer of the uterine cervix). The Kentucky population has higher rates of obesity, heart disease, and diabetes. These health problems have devastating impact on the workforce and economy of Kentucky communities. The graduates from this program will have unique skills that will help them measure the effectiveness of no health intervention programs, including educations, screening, and treatment.
Until individuals with the specific education outlined in this proposal are available, Kentucky communities will continue to suffer from health problems that can be prevented or controlled through more effective education, screening and treatment programs.
D. Specific benefits. See above.

MS in Epidemiology

Prerequisites:
Bachelor's Degree
Calculus: Univariate Differential and Integral Calculus
One course in Life Sciences
STA 580: Biostatistics 1 or equivalent

Fall	Spring
Year 1	
CPH 605 Intro Epidemiology	CPH 712 Adv. Epidemiology
BST 675 Biometrics I (4 credit hours)	BST 676 Biometrics II (4 credit hours)
BST 639 Computing Tools (SAS, R, STATA, Epi Info)	BST 730 Advanced Regression
Year 2	
EPI 714 Epidemiologic Study Design	EPI 711 Chronic Disease Epidemiology (can be fulfilled by CPH 616, CPH 711, or CPH 718)
BST 731 Time to Event Analysis	EPI ___ Elective
EPI 716 Infectious Disease Epidemiology	EPI ___ Elective
CPH 701 Current Issues in Public Health	

Requirements	Credit Hours
11 Core courses	33
Epidemiology electives or other electives (under advisement)	6
Masters thesis	0
Total	39 credit hours