George Mason University
Graduate Course Approval/Inventory Form

Please complete this form and attach a copy of the syllabus for new courses. Forward it as an email attachment to the Secretary of the Graduate Council. A printed copy of the form with signatures should be brought to the Graduate Council Meeting. Complete the Coordinator Form on page 2, if changes in this course will affect other units.

Please indicate: NEW

Local Unit: CNHS
Graduate Council Approval Date:

Course Abbreviation: HSCI
Course Number: 726

Full Course Title: Advanced Seminar in Epidemiology

Abbreviated Course Title (24 characters max.): Advanced Seminar in Epidemiology

Credit hours: 3
Program of Record: Health Systems Management

Repeatable for Credit? N=Cannot be repeated for credit

Activity Code (please indicate): Seminar (SEM)

Catalog Credit Format: 3: 3: 0
Course Level: GA(700+)

Maximum Enrollment: 20

For NEW courses, first term to be offered: Fall 2005

Prerequisites or co-requisites: HSCI 712

Catalog Description (35 words or less): Explore use of Causal Networks and Bayesian Probability Models in making causal inferences from non-randomized studies in health care domain. Statistical concepts such as confounding, selection bias, overall effects, direct effects, and intermediate variables will be defined and statistically measured within the context of a counterfactual causal model. The course focuses on application of causal diagrams to epidemiological studies. Students will reanalyze data sets using software available for causal diagrams and apply appropriate descriptive and analytic epidemiologic methodology to the data.

For MODIFIED or DELETED courses as appropriate:

Last term offered:
Previous Course Abbreviation: Previous number:

Description of modification:

APPROVAL SIGNATURES:

Submitted by: Farrokh Alemi, Ph.D. Email: falemi@gmu.edu

Department/Program: Farrokh Alemi, Ph.D. Date: November 13th 2004

College Committee: ______________________________ Date: ________________

Graduate Council Representative: ______________________________ Date: ________________
GEORGE MASON UNIVERSITY
Course Coordination Form

**Approval from other units:**

Please list those units outside of your own who may be affected by this new, modified, or deleted course. Each of these units must approve this change prior to its being submitted to the Graduate Council for approval.

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Graduate Council approval: ____________________________ Date: __________

Graduate Council representative: ______________________ Date: __________

Provost Office representative: ________________________ Date: __________
**Proposed modified course:** HSCI 726 (3: 3: 0)

**Proposed Title:** Advanced Seminar in Epidemiology

**Prerequisites:** HSCI 712 or equivalent course

**Proposed Course Description:** Explore use of Causal Networks and Bayesian Probability Models in making causal inferences from non-randomized studies in health care domain. Statistical concepts such as confounding, selection bias, overall effects, direct effects, and intermediate variables will be defined and statistically measured within the context of a counterfactual causal model. The course focuses on application of causal diagrams to epidemiological studies. Students will reanalyze data sets using software available for causal diagrams and apply appropriate descriptive and analytic epidemiologic methodology to the data.

**Course Objectives:**

1. Interpret recent findings on the natural history, risk factors and methods specific to the study of the disease or condition the student has chosen
2. Propose appropriate investigative methodology to address gaps in the study of a specific health problem or condition of choice
3. Demonstrate ability to collect small data sets to be combined with extant data.
4. Manage a large data set.
5. Demonstrate knowledge of data mining and its application in epidemiological investigations
6. Analyze data using causal models
7. Distinguish between causal and association inferences
8. Interpret findings from causal models