APPLICATION FOR NEW COURSE

1. Submitted by the College of Arts and Sciences Date: 10/04/01

Department/Division offering course: Statistics

2. Proposed designation and Bulletin description of this course:

(a) Prefix and Number: STA 700  
(b) Title*Foundations of Probability and Inference*  
   *(subt. req.)*

   *NOTE: If the title is longer than 24 characters (including spaces), write
   a sensible title (not exceeding 24 characters) for use in transcripts: Foundations of Prob.*

(c) Lecture/Discussion hours per week 3  
(d) Laboratory hours per week

(e) Studio hours per week

(f) Credits: 3

(g) Course description: Measures on the real line and probability spaces, Lebesgue measure, properties of
distribution functions and random variables, integrals and expectations.

(h) Prerequisites (if any): MA 471G – Advanced Calculus I

(i) May be repeated to a maximum of

4. To be cross-listed as:

   Prefix & No.  
   Signature, Chairman, cross-listing department

5. Effective Date:  Fall, 2002  
   (semester and year)

6. Course to be offered:  
   (a) Fall  ☑  
   (b) Spring  []  
   (c) Summer  []

7. Will the course be offered each year?  
   (a) Yes  ☑  
   (b) No  []

   (Explain if not annually):

8. Why is this course needed:  
   A fundamental knowledge of probability is essential for successful completion of the
   Ph.D. core classes in Statistics

9. (a) By whom will the course be taught?  
    William Griffith

   (b) Are facilities for teaching the course now available?  
    (a) Yes  ☑  
    (b) No  []

   If not, what plans have been made for providing them?
10. What enrollment may be reasonably anticipated? 5-10

11. Will this course serve students in the Department primarily? (a) Yes ☒ (b) No ☐
   Will it be of service to a significant number of students outside the Department? (a) Yes ☐ (b) No ☒
   If so, explain: ____________________________________________________________

12. Will the course serve as a University Studies Program course? (a) Yes ☐ (b) No ☒
    If yes, under what Area?

13. Check the category most applicable to this course:
    ☒ traditional; offered in corresponding departments elsewhere;
    ______ relatively new, now being widely established
    ______ not yet to be found in many (or any) other universities

14. Is this course part of a proposed new program? (a) Yes ☒ (b) No ☐
    If yes, which? Statistics/Probability and Biostatistics tracts within the Statistics Ph.D.
    Will adding this course change the degree requirements in one or more programs?* (a) Yes ☒ (b) No ☐
    If yes, explain the change(s) below: This course will be a prereq for the core curriculum for the Ph.D. in Statistics

15. Attach a list of the major teaching objectives of the proposed course, outline and/or reference list to be used.

16. If the course is a 100-200 level course, please submit evidence (e.g., correspondence) that the Community College System has been consulted.

17. Within the Department, who should be contacted for further information about the proposed course?
    Name/e-mail: Arnold J. Stromberg, DGS Phone Extension: 7-6903

*NOTE: Approval of this course will constitute approval of the program change unless other program modifications are proposed.
SIGNATURES OF APPROVAL:

[Signature]

Department Chair

[Signature]

Dean of the College

[Signature]

Date

APR 09 2002

[Signature]

Date

MAR 28 2002

[Signature]

Date of Notice to the Faculty

*Undergraduate Council

[Signature]

Date

*University Studies

[Signature]

Date

*Graduate Council

[Signature]

Date

*Academic Council for the Medical Center

[Signature]

Date

*Senate Council

[Signature]

Date of Notice to Univ. Senate

*If applicable, as provided by the Rules of the University Senate

ACTION OTHER THAN APPROVAL:
Course Description for STA700

Foundations of Probability and Inference


Teaching Objectives:

1. Students should develop the theoretical foundations for probability theory
2. Students should learn about measurability of functions as a precursor to random variables and about measures and probability measures, in particular
3. Students should be familiar with Lebesgue measure and integration of measurable functions, and the generalizations thereof, as an introduction to expectation of random variables
4. Students should understand probability measures and distribution functions and their properties

Outline

1. Introduction to theoretical probability.
2. Introduction to measurability of functions.
3. Probability measures.
4. Lebesgue measure and integration.
5. Introduction to expectation.
6. Distribution functions.

Nature of Assignments and Grading Criteria:

Weekly Homework – 25%
2 Midterms – 25% each
Final – 25%

Grading Scale:
90-100 – A
80-90 – B
70-80 – C
Below 70 – E
At his or her discretion, the instructor may use a curve.
ARTS AND SCIENCES COLLEGE COUNCIL/CURRICULUM COMMITTEE

INVESTIGATOR REPORT

INVESTIGATING BODY

Area A, Shelley Steiner

(Area, Area Chair)

COURSE MAJOR or DEGREE

STA 700

(department or college)

DATE FOR COUNCIL REVIEW

4/9/02

CATEGORY: NEW, CHANGE, DROP

INSTRUCTIONS: This completed form will accompany the course application to the Graduate/Undergraduate Council(s) in order to avoid needless repetition of investigation. The following questions are included as an outline only. Be as specific and as brief as possible. If the investigation was routine, please indicate this. The term "course" is used to indicate one course, a series of courses or a program, whichever is in order. Return the form to Phil Harling, Associate Dean, 231 Patterson Office Tower for forwarding to the Council(s). ATTACH SUPPLEMENT IF NEEDED.

1. List any modifications made in the course proposal as submitted originally and why.

   None

2. If no modifications were made, review considerations that arose during the investigation and the resolutions.

3. List contacts with program units on the proposal and the considerations discussed therein.

   Dr. Wood / Area A Committee

4. Additional information as needed.

   None

5. A&S Area A, Natural & Mathematical Sciences Curriculum Committee Recommendation:

   APPROVE

6. A&S Council Recommendation:

   APPROVE

7. A&S Council Investigator, Dr. Shelley Steiner

   Date: 4-5-02

File: InvestigatorRpt