

NEW COURSE FORM

OCT 07 2011

OFFICE OF THE
SENATE COUNCIL

1. General Information.

- a. Submitted by the College of: Agriculture Today's Date: 4/5/11
- b. Department/Division: Family Studies
- c. Contact person name: Dr. Donna Smith Email: donnarsmith@uky.edu Phone: 257-7733
u
- d. Requested Effective Date: Semester following approval OR Specific Term/Year¹: _____

2. Designation and Description of Proposed Course.

- a. Prefix and Number: FAM 777
- b. Full Title: APPLIED STATISTICS IN FAMILY SCIENCE
- c. Transcript Title (If full title is more than 40 characters): Applied Statistics in Family Science
- d. To be Cross-Listed² with (Prefix and Number): _____

e. Courses must be described by at least one of the meeting patterns below. Include number of actual contact hours³ for each meeting pattern type.

_____ Lecture _____ Laboratory¹ _____ Recitation _____ Discussion _____ Indep. Study
 _____ Clinical _____ Colloquium _____ Practicum _____ Research _____ Residency
 3 hrs Seminar _____ Studio _____ Other – Please explain: _____

- f. Identify a grading system: Letter (A, B, C, etc.) Pass/Fail
- g. Number of credits: 3
- h. 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
- i. Course Description for Bulletin: EMPHASIS IS ON CONDUCTING STATISTICAL ANALYSES AND REPORTING RESULTS. TOPICS INCLUDE SELECTION OF STATISTICAL APPROACH, TECHNIQUES FOR CONDUCTING ANALYSES, INTERPRETATION OF OUTPUT, AND WRITING THE RESULTS SECTION OF A MANUSCRIPT BASED ON THAT OUTPUT.
- j. Prerequisites, if any: STA 570, FAM 690 (or equivalent) and FAM major
- k. Will this course also be offered through Distance Learning? YES⁴ NO
- l. Supplementary teaching component, if any: Community-Based Experience Service Learning Both
3. Will this course be taught off campus? YES NO

4. Frequency of Course Offering.

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. Laboratory 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.



Department of Family Studies
College of Agriculture
315 Funkhouser Building
Lexington, KY 40506-0054
859 257-7750
fax 859 257-3212
www.uky.edu

April 5, 2011

To: Dr. Larry Grabau, Chair, Agriculture Curriculum Committee

From: Dr. Donna Smith, Chair, Curriculum Committee Family Studies

Re: New Course Proposal – FAM 777 *Applied Statistics in Family Science*

Attached you will find a new course proposal for FAM 777 - *Applied Statistics in Family Science*. Also included is the required program change form for the doctoral program in Family Studies.

The Family Studies faculty voted May 7th, 2010 to drop the requirement FAM 752 – *Seminar in Family Theory Construction* and add the FAM 777 class. Rationale for this change is on page 2 of the program change form.

Thank you for reviewing this proposal. We look forward to a favorable reply.

NEW COURSE FORM

- a. Course will be offered (check all that apply): Fall Spring Summer
- b. Will the course be offered every year? YES NO
If NO, explain: Once every 2 years
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? 10
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: _____
- b. Will this course be a new requirement⁵ for ANY program? YES NO
If YES⁵, list affected programs: DOCTORAL PROGRAM IN FAMILY SCIENCE
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 additional 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.a above) are attached.

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

NEW COURSE FORM

Signature Routing Log

General Information:

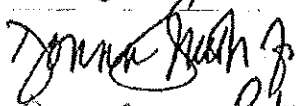

Course Prefix and Number: FAM 777

Proposal Contact Person Name: Donna Smith Phone: 257-7733 Email: donnarsmith@uky.edu

INSTRUCTIONS:

Identify the groups or individuals reviewing the proposal; note the date of approval; offer a contact person for each entry; and obtain signature of person authorized to report approval.

Internal College Approvals and Course Cross-listing Approvals:

Reviewing Group	Date Approved	Contact Person (name/phone/email)	Signature
FAM Faculty	May 7, 2010	Donna Smith / 257-7733 / donnarsmith@uky.edu	
Agriculture Curriculum Committee	4/26/11	Larry Grabau / 257-1885 / lgrabau@uky.edu	
		/ /	
		/ /	
		/ /	

External-to-College Approvals:

Council	Date Approved	Signature	Approval of Revision ⁶
Undergraduate Council			
Graduate Council			
Health Care Colleges Council			
Senate Council Approval		University Senate Approval	

Dr. Brian A. Jackson
Digitally signed by Dr. Brian A. Jackson
 DN: cn=Dr. Brian A. Jackson,
 o=University of Kentucky,
 ou=Graduate School, email=ca-us
 Date: 2011.10.07 15:50:14 -0400

Comments:

⁶ Councils use this space to indicate approval of revisions made subsequent to that council's approval, if deemed necessary by the revising council.

FAM 777: APPLIED STATISTICS IN FAMILY SCIENCES

Fall 2012; [insert meeting time]; [insert location]

Instructor

Jason D. Hans, Ph.D.
302 Funkhouser Building
(859) 257-7761 (office)
(859) 257-3212 (fax)
JHans@uky.edu
Office hours: TBA

Course Description

Emphasis is on conducting statistical analyses and reporting results. Topics include selection of statistical approach, techniques for conducting analyses, interpretation of output, and writing the results section of a manuscript based on that output. Prerequisites: STA 570, FAM 690 (or equivalent), and FAM major.

Learning Outcomes

Students who successfully complete this course will be able to:

- Demonstrate data management and analysis skills.
- Identify appropriate analytical techniques.
- Read, understand, and interpret output.
- Write the results section of a manuscript using statistical output.

Grading Scale

A 92.0 – 100.0
B 84.0 – 91.9
C 76.0 – 83.9
E 0.0 – 75.9

Required Materials

- American Psychological Association. (2010). *Publication manual of the American Psychological Association* (6th ed.). Washington, DC: Author.
- Nicol, A. A. M., & Pexman, P. M. (2010). *Presenting your findings: A Practical Guide for Creating Tables* (6th ed.). Washington, DC: American Psychological Association.
- Morgan, S. E., Reichert, T., & Harrison, T. R. (2002). *From numbers to words*. Boston: Allyn & Bacon.
- Pallant, J. (2010). *SPSS survival manual* (4th ed.). New York: McGraw-Hill.

Recommended Materials

- One of the following, or a similar reference guide:
- Cramer, D., & Howitt, D. (2004). *The SAGE dictionary of statistics*. Thousand Oaks, CA: Sage Publications.
 - Vogt, W. P. (2005). *Dictionary of statistics and methodology: A nontechnical guide for the social sciences*. Thousand Oaks, CA: Sage Publications.

Evaluation Components

Homework (70%)

Purpose: To develop and practice emerging statistical analysis skills.

Assignment: Homework assignments will be distributed each class meeting and due the following class meeting.

Additional Comments: All homework must be typed, follow APA publication manual guidelines (6th ed.), use proper statistical notation (see *From Numbers to Words*), and be printed two-pages per sheet. Homework is due at the start of class; late submissions will be deducted 20% every 24 hours thereafter. Each homework assignment must be completed with a passing score (i.e., $\geq 76\%$), not including any late deduction, to pass the class.

Final Project: Paper & Presentation (15%)

Purpose: To demonstrate competence using statistical software for conducting and interpreting statistical analyses.

Assignment: Develop three or more instructor-approved hypotheses on a single topic that can be tested with the National Survey of Families and Households dataset used throughout the semester, then select and conduct the appropriate statistical analyses to examine the hypotheses. Submit all relevant output and a written report detailing the hypotheses, methods, results, and conclusions formatted in accordance with APA publication manual guidelines (6th ed.) and using proper statistical notation (see *From Numbers to Words*).

Additional Comments: Hypotheses must be received by the instructor via e-mail (JHans@uky.edu) no later than 10:00PM on Monday, November 7. The final project must be received by the instructor via e-mail (JHans@uky.edu) no later than 10:00PM on Monday, November 28. Late projects will be deducted 20% every 24 hours thereafter.

Final Exam (15%)

Purpose: To demonstrate competence using statistical software for conducting and interpreting statistical analyses.

Assignment: Numerous hypotheses will be presented, along with data appropriate for testing the stated hypotheses. You will be required to select and conduct the appropriate statistical analysis for each hypothesis, then write a paragraph (or more) stating the results for each hypothesis.

Additional Comments: Books and notes may be used during the exam, but time will be limited.

Academic Integrity

Cheating or dishonesty in any form is an offense against the university and your peers, and undermines the academic process. *Note that the most common form of academic dishonesty among graduate students is turning in a paper, or a portion of a paper, that has been previously or simultaneously submitted in another class for another assignment.* This is a form of academic dishonesty and you will likely get caught (professors do talk and share information). Any cases of academic dishonesty, including plagiarism, will be referred to the university's administration. The minimum penalty for a first offense is a zero on the assignment and a semester grade reduction of one letter grade, but more serious disciplinary action, such as a grade of XE for the course, may be pursued as circumstances warrant. For more information, students are encouraged to see sections 6.3.* and 6.4.* of The Code of Student Conduct available online at <http://www.uky.edu/StudentAffairs/Code/part2.html>.

Academic Accommodations

If you have a documented disability that requires academic accommodations, please see the instructor as soon as possible during scheduled office hours. In order to receive accommodations in this course, you must provide me with a Letter of Accommodation from the Disability Resource Center (Room 2, Alumni Gym, 257-2754; jkarnes@email.uky.edu) for coordination of campus disability services available to students with disabilities.

Reading Schedule

Note: Assigned readings should be completed before the class meeting for which they are listed.

APA = *Publication Manual of the American Psychological Association*; NW = *From Numbers to Words*; SM = *SPSS Survival Manual*

Week 1: Aug 24 GETTING STARTED

- Syllabus

Week 2: Aug 31 P VALUES & EFFECT SIZESP Values

- Blume, J., & Peipert, J. F. (2003). What your statistician never told you about P-values. *Journal of the American Association of Gynecologic Laparoscopists*, 10, 439-444.
- Du Prel, J.-B., Hommel, G., Röhrig, B., & Blettner, M. (2009). Confidence interval or p-value? *Deutsches Ärzteblatt International*, 106, 335-339.
- Griffiee, D. T. (2004). Research in practice: Understanding significance testing program evaluation. *Journal of Developmental Education*, 27, 28-34.
- Thompson, B. (1994). The concept of statistical significance testing. *Practical Assessment, Research & Evaluation*, 4(5). Retrieved April 13, 2010 from <http://pareonline.net/getvn.asp?v=4&n=5>.
- Victor, A., Elsässer, A., Hommel, G., & Blettner, M. (2010). Judging a plethora of p-values. *Deutsches Ärzteblatt International*, 107, 50-56.
- Whitley, E., & Ball, J. (2002). Statistics review 3: Hypothesis testing and P values. *Critical Care*, 6, 222-225.

Effect Size

- Durlak, J. A. (2009). How to select, calculate, and interpret effect sizes. *Journal of Pediatric Psychology*, 34, 917-928.
- Ferguson, C. J. (2009). An effect size primer: A guide for clinicians and researchers. *Professional Psychology: Research and Practice*, 40, 532-538.
- Hedges, L. V. (2008). What are effect sizes and why do we need them? *Child Development Perspectives*, 2, 167-171.

Week 3: Sep 7 PREPARING DATA

- SM 2: Preparing a codebook (pp. 11-14)
- SM 3: Getting to know SPSS (pp. 15-24)
- SM 4: Creating a data file and entering data (pp. 27-42)

Week 4: Sep 14 SCREENING DATA

- SM 5: Screening and cleaning the data (pp. 43-49)
- SM 8: Manipulating the data (pp. 81-94)
- SM 9: Checking the reliability of a scale (pp. 95-99)

Week 5: Sep 21 DESCRIBING DATA

- SM 6: Descriptive statistics (pp. 53-64)
- SM 7: Using graphs to describe and explore the data (pp. 65-80)
- NW 2: FAQs about Reporting Statistics (pp. 5-22)
- NW 3: Descriptive Information (pp. 23-26)
- NW 8: Presenting Results Visually (pp. 77-99)
- APA 5: Displaying Results (pp. 125-167)

Week 6: Sep 28 SELECTING AN ANALYTICAL APPROACH

- SM 10: Choosing the right statistic (pp. 100-118)
- SM P4: Statistical techniques to explore relationships among variables (pp. 119-125)
- SM P5: Statistical techniques to compare groups (pp. 201-209)

Week 7: Oct 5 CORRELATION

- SM 11: Correlation (pp. 126-127)
- SM 12: Partial correlation (pp. 142-145)
- NW 5: Correlation (pp. 31-34)

Week 8: Oct 12 REGRESSION

- SM 13: Multiple regression (pp. 146-165)
- SM 14: Logistic regression (pp. 166-178)
- Multinomial Logistic Regression (reading will be provided)
- Ordinal Regression (reading will be provided)
- Discriminate Analysis (reading will be provided)
- NW 7: Multiple Regression (pp. 69-73)

Week 9: Oct 19 FACTOR ANALYSIS & CANONICAL CORRELATION

- SM 15: Factor analysis (pp. 179-199)
- Canonical Correlation (reading will be provided)

Week 10: Oct 26 NONPARAMETRIC STATISTICS

- SM 16: Non-parametric statistics (pp. 210-231)
- SM 17: T-tests (pp. 232-241)
- NW 6: Nonparametric Tests (pp. 35-49)
- NW 7: z test and t test (pp. 52-55)

Week 11: Nov 2 ANOVA

- SM 18: One-way ANOVA (pp. 242-256)
- SM 19: Two-way between-groups ANOVA (pp. 257-265)
- SM 20: Mixed between-within subjects ANOVA (pp. 266-274)
- NW 7: (M)AN(C)OVA (pp. 55-68)

Week 12: Nov 9 MANOVA / ANCOVA

Note: Final project hypotheses due @ 10:00PM on Monday, Nov 7

- SM 21: Multivariate ANOVA (pp. 275-289)
- SM 22: Analysis of covariance (pp. 290-311)

Week 13: Nov 16 No CLASS (NCFR)**Week 14: Nov 23 No CLASS (THANKSGIVING)****Week 15: Nov 30 HIERARCHICAL LINEAR MODELING**

Note: Final project due @ 10:00PM on Monday, Nov 28

- Adewale, A. J., Hayduk, L., Estabrooks, C. A., Cummings, G. G., Midodzi, W. K., & Derksen, L. (2007). Understanding hierarchical linear models. *Nursing Research*, 56, S40-S46.
- Shin, J. H. (2009). Application of repeated-measures analysis of variance and hierarchical linear model in nursing research. *Nursing Research*, 58, 211-217.

Week 16: Dec 7 STRUCTURAL EQUATION MODELING

- Tomarken, A. J., & Waller, N. G. (2005). Structural equation modeling: Strengths, limitations, and misconceptions. *Annual Review of Clinical Psychology*, 1, 31-65.

Week 17: Dec 14 FINALS WEEK

- Exam will be at the usual class meeting time and location.