Texas A&M University
Departmental Request for a New Course
Undergraduate • Graduate • Professional
• Submit original form and attach a course syllabus.

1. This request is submitted by the Department of ____________________________
   Educational Psychology

2. Course prefix, number and complete title of course: EPSY654 Longitudinal Data Analysis

3. Course description (not to exceed 50 words): Review of traditional approaches to longitudinal data analysis (e.g., MANOVA); consideration of newer approaches including multilevel modeling (MLM) and latent growth modeling (LGM) and their advantages in analyzing longitudinal data.

4. Prerequisite(s): EPSY651 and EPSY652
   Cross-listed with: ____________________________

5. Is this a variable credit course? □ Yes ☒ No If yes, from ________ to ________
6. Is this a repeatable course? □ Yes ☒ No If yes, this course may be taken ________ times.
   Will this course be repeated within the same semester? □ Yes ☒ No

7. Has this course been taught as a 489/689? □ Yes ☒ No If yes, how many times? ______
   Indicate the number of students enrolled for each academic period it was taught. ____________________________

8. This course will be:
   a. required for students enrolled in the following degree program(s) (e.g., B.A. in history)
      Ph.D. in EPSY with specialization in Research, Measurement, and Statistics
   b. an elective for students enrolled in the following degree program(s) (e.g., M.S., Ph.D. in geography)

9. If other departments are teaching or are responsible for related subject matter, the course must be coordinated with these departments. Attach approval letters.

10. Prefix    Course #    Title (excluding punctuation):
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    Approval recommended by:
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    Head of Department Date
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    Dean of College Date
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    Dean of College Date

    Submitted to Coordinating Board by:
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    Associate Director, Curricular Services Date
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    Effective Date
November 19, 2008

MEMORANDUM

TO: Dr. Victor Willson, Department Head
Department of Educational Psychology

FROM: Michael Longnecker, Associate Department Head
Department of Statistics

SUBJECT: New Course Offerings

The Department of Statistics does not object to the Department of Educational Psychology offering the courses: EPSY 653 - Advanced Structural Equation Modeling, EPSY 637 - Qualitative Methods and Analysis, and EPSY 654 - Longitudinal Data Analysis.

These courses does not overlap with any of our graduate service courses.
EPSY 654 Longitudinal Data Analysis

Time: Wed 1:50-4:30pm
Classroom: EDCT 717

Instructor: Dr. Oiman Kwok
Office: 718A Harrington Tower
Phone: (979)458-1407 [Office]; (979)862-1256 [Fax]
Email: omkwok@neo.tamu.edu
Office hours: Thurs. 10am-1pm or by appointment

Teaching Assistant: Ms. Malena Zou
Office hours: Wed 10am-noon
Office: Harrington Tower Rm638

Course Syllabus

Course Description
The use and quality of longitudinal research designs has increased over the past decade, and new approaches for analyzing longitudinal data, including multi-level modeling (MLM) and latent growth modeling (LGM), have been developed. The purpose of this course is to review the traditional approaches (e.g., MANOVA) and demonstrate the use of the new approaches including MLM and LGM and their advantages in analyzing longitudinal data.

Course Objectives
The use and quality of longitudinal research designs has increased over the past decade, and new approaches for analyzing longitudinal data, including multi-level modeling (MLM) and latent growth modeling (LGM), have been developed. The purpose of this course is to review the traditional approaches (e.g., MANOVA) and demonstrate the use of the new approaches including MLM and LGM and their advantages in analyzing longitudinal data.

There are three major objectives of this course:
1. To understand different statistical methods for analyzing longitudinal data;
2. To be able to specify your own models and analyze the data using one of the related programs (e.g., SPSS MIXED, SAS proc Mixed, HLM, and Mplus);
3. To be able to interpret the statistical findings to lay persons.

Prerequisites
Students are expected to have taken both EPSY651 and EPSY652. Students who have not taken the required courses have to meet with me before they register for this course.

Grading and Assignments
Grades will be based on the following:
a) Assignments (60%)
b) Final in-class presentation (4/23/09: 40%)

Grading Policy
86-100 A
71-85 B
61-70 C
51-60 D
Below 50 F
Note: You are encouraged to work with other students on the assignments. You will work with a partner on the final presentation. You may analyze your own data or data which were collected by other individual (as long as that individual has not analyzed the data addressing the same research questions you are attempting to answer). The final presentation should include the following four sections: Introduction, method, results, and discussion. You should apply the HLM techniques you learn from this course to your final project. You and your partner should schedule a meeting with me to talk about your final presentation before 4/4/09.

**Textbooks**


Supplementary articles on various topics will be posted on the class webpage.

**Tentative Topics (not in sequential order)**

| 1. Brief review of simple regression, multiple regression & coding schemes for categorical predictors |
| 2. Traditional approaches for analyzing longitudinal data: Univariate ANOVA |
| 3. Traditional approaches for analyzing longitudinal data: Multivariate ANOVA |
| 4. Time series analysis |
| 5. Review of multilevel models (MLMs) |
| 6. The application of MLMs on analyzing longitudinal data (mean structure and variance structure) |
| 7. Model estimation and evaluation |
| 8. Longitudinal data analysis I: Linear growth models |
| 9. Longitudinal data analysis II: Non-linear growth models |
| 10. Longitudinal data analysis III: Other alternative models (e.g., longitudinal parallel processing model, modeling heterogeneity) |
| 11. Latent growth model |
| 12. Growth mixture model |
| 13 Advanced topics II: Power analysis and sample size estimation |
Additional Class Readings


**Students with Special Needs**
The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you believe you have a disability requiring an accommodation, please contact the Disability Services in Room B118, Cain Hall. The telephone number is 845-1637. Any student who could require assistance in the event of a necessary evacuation of the building in which this class is taught are asked to notify the instructor so that individuals can be identified to assist him/her during an evacuation.

**Handouts**
The handouts used in this course are copyrighted. By "handouts" I mean all materials generated for this class, which include but are not limited to syllabi, quizzes, lab problems, in-class materials, review sheets, and additional problem sets. Because these materials are copyrighted, you do not have the right to copy the handouts, unless I expressly grant permission.
**Academic Dishonesty**

Academic Integrity Statement: An Aggie does not lie, cheat, or steal or tolerate those who do. As commonly defined, plagiarism consists of passing off as one's own ideas, words, writings, etc. which belong to another. In accordance with this definition, you are committing plagiarism if you copy the work of another person and turn it in as your own, even if you should have the permission of that person. Plagiarism is one of the worst academic sins, for the plagiarist destroys the trust among colleagues, without which research cannot be safely communicated. If you have any questions regarding plagiarism, please consult the Honor Council Rules and Procedures on the web at http://www.tamu.edu/aggiehonor.