Texas A&M University
Departmental Request for a Change in Course
Undergraduate • Graduate • Professional
Submit original form and attachments

1. This request is submitted by the Department of STATISTICS

2. Course prefix, number and complete title of course: STAT 632 - Statistical Decision Theory

Attach a brief supporting statement for changes made to items 3a thru 3d, and 5 below.

3. Change requested
   a) Prerequisite(s): From ______________________ To ______________________
   b) Withdrawal (reason) ______________________
   c) Cross-list with ______________________

   Cross-listed courses require the signature of both department heads.

   d) Change in course title and description. Enter complete current course title and current course description; complete proposed course title and proposed course description in items 4 and 5.

   e) Change in credit/_CONTACT hours. Complete item 6b. Underscore change(s). Attach a course syllabus.

4. Complete current course title and current course description:

   Statistical Decision Theory:
   Fundamentals of Bayesian inference, single and multi-parameter models, Bayesian regression and linear models, posterior simulation, MCMC, hierarchical models.

5. Complete proposed course title and proposed course description (not to exceed 50 words):

   Statistical Methodology II - Bayesian Modeling and Inference: Decision theory; fundamentals of Bayesian inference, single and multi-parameter models; Gaussian model; linear and generalized linear models; Bayesian computations; asymptotic methods; non-iterative MC; MCMC; hierarchical models; nonlinear models; random effect models; survival analysis; spatial models.

6. a) As currently in course inventory:

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<th>Prefix</th>
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<td>STAT DECISION THEORY</td>
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   b) Change to:

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Approval recommended by:

Michael Jorgensen  2-19-2009
Head of Department Date

Chair, College Review Committee
Date

Dean of College
Date

Submitted to Coordinating Board by:

Director of Academic Support Services
Date

Questions regarding this form should be directed to Sandra Williams at 845-8836.
OAR/AS – 04/07

1 of 4 B19
February 12, 2009

MEMORANDUM

TO: University Curriculum Committee

FROM: Michael Longnecker
Associate Department Head, Statistics

SUBJECT: Change in Statistics Courses

The Department of Statistics has recently conducted an in-depth analysis of its Ph.D. program. The result of this analysis was a revision of several courses and the development of new courses to reflect new areas of research in statistics. The follow courses required changes in the topics covered in the course and/or changes in the course prerequisites: STAT 604, STAT 605, STAT 612, STAT 613, STAT 614, STAT 620, STAT 621, and STAT 632.
STATISTICS 632
Fall Semester, 2008

Instructor: Jeff Hart
Office: 459E Blocker Building
Phone: 845-1467
Email: hart@stat.tamu.edu
Office hours: 3:00-4:00 Monday, Wednesday and Friday, or by appointment
Course website: http://stat.tamu.edu/~hart/632/632.html
Prerequisites: STAT 611, or its equivalent

Grading Policy

1. Exams: You will have two exams: a midterm and a final that will each constitute 35% of your grade.

2. Homework: Homework will be assigned and collected on a regular basis and will count 30% of your grade. I may not grade every homework problem, but feel free to discuss any of the problems with me. You may consult with other students about the homework, but always write up your solutions by yourself. You should never just copy from another person or a solutions manual.

3. Missed assignments: Late homework will not be accepted without an excuse that is recognized as valid by the university. Likewise, you will only be allowed to make up an exam if it is missed for a valid reason.

Course Outline

1. Fundamentals: What is Bayesian statistics? (Chap. 1)
2. Single-parameter models (Chap. 2)
3. Multiparameter models (Chap. 3)
4. Large-sample inference (Chap. 4)
5. Regression (Chap. 14)
6. Generalized linear models (Chap. 16)
7. Posterior approximation methods, including MCMC (Chap. 10, 11)
8. Hierarchical models (Chap. 5, 15)

(Please turn over)
References

Below are books to which I’ll refer or that you may find useful as study aids.

- Barnett, *Comparative Statistical Inference*
- Berger, *Statistical Decision Theory and Bayesian Analysis*
- Box and Tiao, *Bayesian Inference in Statistical Analysis*
- Carlin and Louis, *Bayes and Empirical Bayes Methods for Data Analysis*
- Ferguson, *Mathematical Statistics: A Decision-Theoretic Approach*
- Gilks, Richardson and Spiegelhalter, *Markov Chain Monte Carlo in Practice*
- Press, *Bayesian Statistics: Principles, Models and Applications*
- Wald, *Statistical Decision Functions*

**STATEMENT ON DISABILITIES**

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 for their disabilities. If you believe you have a disability requiring an accommodation, please contact the Office of Disabilities Services in Room B118, Cain Hall. The phone number is 845-1637.

**STATEMENT ON PLAGIARISM**

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, exams, 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. As commonly defined, plagiarism consists of passing off as one’s own ideas, words, writing, 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 latest issue of the Texas A&M University Student Rules, under the section “Scholastic Dishonesty.”

**ACADEMIC INTEGRITY STATEMENT**

“An Aggie does not lie, cheat, or steal or tolerate those who do.”

Information about the Honor Council Rules and Procedures can be obtained at the web site: [www.tamu.edu/aggiehonor](http://www.tamu.edu/aggiehonor). If an instructor encounters a student cheating or not abiding by university rules then it is mandatory that the instructor report the student to the Aggie Honor System Office: complete information at [http://www.tamu.edu/aggiehonor](http://www.tamu.edu/aggiehonor).