Engr200 Spring 2009 Syllabus

Last updated: Feb 09, 2009

- **Lectures:**
  - **Section 1:** M/W 12:30-13:45 ENG-Z15
    Instructor: Tevfik Metin Sezgin, ENG-204, x1540
    Office hours: T/R 11:00-12:00 or by appointment
  - **Section 2:** T/R 09:30-10:45 ENG-Z15
    Instructor: Deniz Yuret, ENG-118, x1724
    Office hours: T/R 11:00-12:00 or by appointment
  - **Problem Sessions:** FRI 12:30 and 15:30 ENG-B29
    Every Friday there will be problem sessions. Attendance is mandatory. Please go to the section assigned to you in KUAIS.
- **Teaching assistants:**
  - Cigdem Sevim, ENG-110, x1736, csevim@ku.edu.tr
  - Gorkem Saygili, ENG-229, x2640, gsaygili@ku.edu.tr
  - Erdem Erden, ENG-Z19, x1772, eerden@ku.edu.tr
  - Osman Eryurt, oeryurt@ku.edu.tr
  - Office hours: TBA
- **Recommended textbooks:**
  - Information Theory, Inference and Learning Algorithms by David C. MacKay. Cambridge. 2003.
    http://www.inference.phy.cam.ac.uk/mackay/itila
  - Applied Statistics and Probability for Engineers by Douglas C. Montgomery, George C. Runger. Wiley, 4th ed.
  - Probability and statistics for engineering and sciences by J. L. Devore. Duxbury Press, 5th ed.
  - Probability, random variables, and stochastic processes by A. Papoulis. Mc Graw Hill 1984.
  - Introduction to probability and statistics for engineers and scientists by Sheldon Ross. New York: John Wiley and Sons Inc.1987.
- **Course webpage:** http://ais.ku.edu.tr/course/12447/Default.html
  The webpage includes information about the course, instructors, TAs, copies of class notes, specimens of previous year's exams, grades, homework assignments, etc.
- **Problem set webpage:** http://etutor.ku.edu.tr/engr200
  Please register on the etutor website to get the questions and submit the answers for your weekly problem sets.
- **Course email:** Please email any questions you have about the course to engr200help@ku.edu.tr.
- **Textbook:** Introduction to Probability by D. P. Bertsekas and J. N. Tsitsiklis. Massachusetts: Athena Scientific. 2002.
- **Lecture notes:** Available on the webpage of the course.
- **Grading:** problem sets: 10%, midterm 1: 25%, midterm 2: 25%, final: 40%. These percentages are subject to change at the instructor's discretion.
- **Make-up policy:** Make-ups will be given for an exam, if a student has a valid excuse for missing the exam. However, students should note that the make-up exams will be harder than the original exams since the students who take the make-up exams have the opportunity of learning about the questions. Moreover, it is student's responsibility to contact the instructor timely (specifically within a week from the exam) to prove that s/he has a valid excuse, and to arrange the time and place of the make-up exam.
- **Academic honesty:** Honesty and trust are important to all of us as individuals. Students and faculty adhere to the following principles of academic honesty at Koc University:
  - Individual accountability for all individual work, written or oral. Copying from others or providing answers or information, written or oral, to others is cheating.
  - Providing proper acknowledgement of original author. Copying from another student's paper or from another text without written acknowledgement is plagiarism.

- Study or project group activity is effective and authorized teamwork. Unauthorized help from another person or having someone else write one's paper or assignment is collusion.

Cheating, plagiarism, and collusion are serious offenses resulting in an F grade and disciplinary action.

- **Schedule:**

Feb 10: Introduction
Feb 12: Probabilistic Models (1.1,1.2)
Feb 17: Conditional Probability (1.3)
Feb 19: Total Probability Theorem and Bayes' Rule (1.4)
Feb 24: Independence (1.5)
Feb 26: Counting (1.6, 1.7)
Mar 03: Probability Mass Functions (2.1,2.2)
Mar 05: Functions of Random Variables (2.3)
Mar 10: Mean, Variance, and Moments (2.4)
Mar 12: Joint PMFs (2.5)
Mar 17: Conditioning (2.6)
Mar 19: Independence of Random Variables (2.7)
Mar 25: *Midterm 1*
Mar 26: Parameter Estimation
Mar 31: Continuous Random Variables and PDFs (3.1)
Apr 02: Cumulative Distribution Functions (3.2)
Apr 6-10: *Spring Break*
Apr 14: Normal Random Variables (3.3)
Apr 16: Conditioning on an Event (3.4)
Apr 21: Multiple Random Variables (3.5)
Apr 23: *Cocuk Bayrami*
Apr 28: Review
Apr 29: *Midterm 2*
May 05: Bayes rule for continuous random variables (3.5)
May 07: Derived Distributions (3.6)
May 12: Covariance, independence, causality (4.5)
May 14: (Sezgin) Stochastic Processes (Ch.5)
May 14: (Yuret) Inference and Prediction (M2.1-2.3)
May 19: *Holiday*
May 21: (Sezgin) Markov Processes (Ch.6)
May 21: (Yuret) Inference and Prediction (M3)
Jun 2: *Final Exam (15:00 ENG-Z50)*

- * M2.1 indicates Section 2.1 in MacKay.

Engr200 Spring 2008 Syllabus

Last updated: February 4, 2008

- **Lectures:**
  - **Section 1:** M/W 11:00-12:15 ENG-129
    Instructor: Oguz Sunay, ENG-117, x1535
    Office hours: T/T 9:00-11:00
  - **Section 2:** M/W 15:30-16:45 ENG-129
    Instructor: Deniz Yuret, ENG-118, x1724
    Office hours: TU 09:00-12:00 or by appointment
- **Course webpage:** http://ais.ku.edu.tr/course/10721/Default.html
  The webpage includes information about the course, instructors, TAs, copies of class notes, specimens of previous year's exams, grades, homework assignments, etc.
- **Problem set webpage:** http://etutor.ku.edu.tr/engr200
  Please register on the etutor website to get the questions and submit the answers for your weekly problem sets.
- **Course email:** Please email any questions you have about the course to engr200help@ku.edu.tr.
- **Textbook:** Introduction to Probability by D. P. Bertsekas and J. N. Tsitsiklis. Massachusetts: Athena Scientific. 2002.
- **Problem sessions:** Every week there will be problem sessions. Attendance is mandatory. Please go to the sections assigned to you in KUAIS.
- **Teaching assistants:** Pelin Armutlu, Mehmet Mümtaz Bakan, Engin Sansarcı, Ayşegül Öztürk; Office hours on Friday, time and place to be announced.
- **Recommended textbooks:**
  - Applied Statistics and Probability for Engineers by Douglas C. Montgomery, George C. Runger. Wiley, 4th ed.
  - Probability and statistics for engineering and sciences by J. L. Devore. Duxbury Press, 5th ed.
  - Probability, random variables, and stochastic processes by A. Papoulis. Mc Graw Hill 1984.
  - Introduction to probability and statistics for engineers and scientists by Sheldon Ross. New York: John Wiley and Sons Inc.1987.
- **Lecture notes:** Available on the webpage of the course.
- **Grading:** problem sets: 10%, midterm 1: 25%, midterm 2: 25%, final: 40%. These percentages are subject to change at the instructor's discretion.
- **Make-up policy:** Make-ups will be given for an exam, if a student has a valid excuse for missing the exam. However, students should note that the make-up exams will be harder than the original exams since the students who take the make-up exams have the opportunity of learning about the questions. Moreover, it is student's responsibility to contact the instructor timely (specifically within a week from the exam) to prove that s/he has a valid excuse, and to arrange the time and place of the make-up exam.
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- **Schedule:**

Feb 4: Introduction
Feb 6: Probabilistic Models (1.1,1.2)
Feb 11: Conditional Probability (1.3)
Feb 13: Total Probability Theorem and Bayes' Rule (1.4)
Feb 18: Independence (1.5)
Feb 20: Counting (1.6, 1.7)
Feb 25: Probability Mass Functions (2.1,2.2)
Feb 27: Functions of Random Variables (2.3)
Mar 3: Mean, Variance, and Moments (2.4)
Mar 5: Joint PMFs (2.5)
Mar 10: Conditioning (2.6)
Mar 12: Independence of Random Variables (2.7)
Mar 14: Midterm 1 (17:30-20:30 in ENG-Z15, Z16, B29)
Mar 17: Parameter Estimation
Mar 19: Continuous Random Variables and PDFs (3.1)
Mar 24: Cumulative Distribution Functions (3.2)
Mar 26: Normal Random Variables (3.3)
Mar 31: Conditioning on an Event (3.4)
Apr 2: Multiple Random Variables (3.5)
Apr 7-11: Spring Break
Apr 14: Multiple Random Variables (3.5)
Apr 16: Derived Distributions (3.6)
Apr 21: Derived Distributions (3.6)
Apr 23: Cocuk Bayrami
Apr 25: Midterm 2 (18:20-21:20 in ENG-Z15, Z16, B29)
Apr 28: Point Estimation (M7.1,M7.2,M7.3)
Apr 30: Point Estimation (M7.3,M7.4)
May 5: Confidence Intervals (M8.2,M8.5)
May 7: Confidence Intervals (M8.2,M8.5)
May 12: Hypothesis Testing (M9.1,M9.2)
May 14: Hypothesis Testing (M9.2,M9.5)
May 22-31: Final Exams

- * M7.1 indicates Section 7.1 in Montgomery.

Engr200 Spring 2007 Syllabus

Last updated: May 13, 2007

- **Lectures:**
  - **Section 1:** M/W 11:00-12:15 ENG-B29
    Instructor: Deniz Yuret, ENG-118, x1724
    Office hours: M/W 15:00-16:00
  - **Section 2:** M/W 15:30-16:45 ENG-B29
    Instructor: Oguz Sunay, ENG-117, x1535
    Office hours: TU 09:00-12:00 or by appointment
- **Course webpage:** http://ais.ku.edu.tr/course/9638/Default.html
  The webpage includes information about the course, instructors, TAs, copies of class notes, specimens of previous year's exams, grades, homework assignments, etc.
- **Problem set webpage:** http://etutor.ku.edu.tr/engr200
  Please register on the etutor website to get the questions and submit the answers for your weekly problem sets.
- **Course email:** Please email any questions you have about the course to engr200help@ku.edu.tr.
- **Textbook:** Introduction to Probability by D. P. Bertsekas and J. N. Tsitsiklis. Massachusetts: Athena Scientific. 2002.
- **Problem sessions:** Every week there will be problem sessions. Attendance is mandatory. Please go to the sections assigned to you in KUAIS.
- **Teaching assistants:** Cagdas Atici, Tugba Ozbilgin, Ismail Iyigunler, Deniz Akar; Office hours on Friday 11:00-12:30 in ENG-227.
- **Recommended textbooks:**
  - Applied Statistics and Probability for Engineers by Douglas C. Montgomery, George C. Runger. Wiley, 4th ed.
  - Probability and statistics for engineering and sciences by J. L. Devore. Duxbury Press, 5th ed.
  - Probability, random variables, and stochastic processes by A. Papoulis. Mc Graw Hill 1984.
  - Introduction to probability and statistics for engineers and scientists by Sheldon Ross. New York: John Wiley and Sons Inc.1987.
- **Lecture notes:** Available on the webpage of the course.
- **Grading:** problem sets: 10%, midterm 1: 25%, midterm 2: 25%, final: 40%. These percentages are subject to change at the instructor's discretion.
- **Make-up policy:** Make-ups will be given for an exam, if a student has a valid excuse for missing the exam. However, students should note that the make-up exams will be harder than the original exams since the students who take the make-up exams have the opportunity of learning about the questions. Moreover, it is student's responsibility to contact the instructor timely (specifically within a week from the exam) to prove that s/he has a valid excuse, and to arrange the time and place of the make-up exam.
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  - Providing proper acknowledgement of original author. Copying from another student's paper or from another text without written acknowledgement is plagiarism.
  - Study or project group activity is effective and authorized teamwork. Unauthorized help from another person or having someone else write one's paper or assignment is collusion.

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- **Schedule:**

Feb 5: Introduction
Feb 7: Probabilistic Models (1.1,1.2)
Feb 12: Conditional Probability (1.3)
Feb 14: Total Probability Theorem and Bayes' Rule (1.4)
Feb 19: Independence (1.5)
Feb 21: Counting (1.6, 1.7)
Feb 26: Probability Mass Functions (2.1,2.2)
Feb 28: Functions of Random Variables (2.3)
Mar 5: Mean, Variance, and Moments (2.4)
Mar 7: Joint PMFs (2.5)
Mar 12: Conditioning (2.6)
Mar 14: Independence of Random Variables (2.7)
Mar 19: Midterm 1 (17:30-20:30 in ENG-Z15, Z16, B29)
Mar 21: Parameter Estimation
Mar 26: Continuous Random Variables and PDFs (3.1)
Mar 28: Cumulative Distribution Functions (3.2)
Apr 2-6: Spring Break
Apr 9: Normal Random Variables (3.3)
Apr 11: Conditioning on an Event (3.4)
Apr 16: Multiple Random Variables (3.5)
Apr 18: Multiple Random Variables (3.5)
Apr 23: Cocuk Bayrami
Apr 24: Midterm 2 (18:20-21:20 in ENG-Z15, Z16, B29)
Apr 25: Derived Distributions (3.6)
Apr 30: Point Estimation (M7.1,M7.2,M7.3)
May 2: Point Estimation (M7.3,M7.4)
May 7: Cancelled
May 9: Confidence Intervals (M8.2,M8.5)
May 14: Hypothesis Testing (M9.1,M9.2)
May 16: Hypothesis Testing (M9.2,M9.5)
May 22-31: Final Exams

- * M7.1 indicates Section 7.1 in Montgomery.

Engr200 Fall 2005 Syllabus

Last updated: Jan 04, 2006

- **Lectures:**
  - **Section 1:** M/W 9:30-10:45 ENG-B29
    Instructor: Deniz Yuret, dyuret@ku.edu.tr, ENG-118, x1724
    Office hours: M/W 15:30-17:00
  - **Section 2:** M/W 14:00-15:15 ENG-B29
    Instructor: Lerzan Ormeci, lormeci@ku.edu.tr, ENG-207, x1534
    Office hours: Mon. 15:30-16:45, Fri. 10:45-12:00
- **Course webpage:** http://ais.ku.edu.tr/course/7965/Default.html
  The webpage includes information about the course, instructors, TAs, copies of class notes, specimens of previous year's exams, grades, homework assignments, etc.
- **Problem set webpage:** http://etutor.ku.edu.tr/engr200
  Please register on the etutor website to get the questions and submit the answers for your weekly problem sets.
- **Course email:** Please email any questions you have about the course to engr200help@ku.edu.tr.
- **Textbook:** Introduction to Probability by D. P. Bertsekas and J. N. Tsitsiklis. Massachusetts: Athena Scientific. 2002.
- **Problem sessions and labs:** Every three weeks there will be a lab, during the other weeks there will be problem sessions. Attendance is mandatory. Please go to the sections assigned to you in KUAIS. See the calendar below for the exact schedule.
- **Teaching assistants and office hours:**
  Ali Ozturk: alozturk@ku.edu.tr, ENG-218, Wed. 15:30-17:00
  Bora Cekyay: bcekyay@ku.edu.tr, ENG-218, Thu. 15:30-17:00
  Pinar Kahraman: pkahraman@ku.edu.tr, ENG-142, Tue. 9:30-11:00
  Seda Tepe: stepe@ku.edu.tr, ENG-142, Tue. 12:30-14:00
  Zeynep Ozyurt: zozyurt@ku.edu.tr, CAS-271, Mon. 12:30-14:00
- **Recommended textbooks:**
  - Probability and statistics for engineering and sciences by J. L. Devore. Duxbury Press, 5th ed.
  - Probability and statistics in engineering and management science by W. W. Hines and D. C. Montgomery. New York: John Wiley and Sons Inc.1980. 3rd ed.
  - Probability, random variables, and stochastic processes by A. Papoulis. Mc Graw Hill 1984.
  - Introduction to probability and statistics for engineers and scientists by Sheldon Ross. New York: John Wiley and Sons Inc.1987.
- **Lecture notes:** Available on the webpage of the course.
- **Grading:** 20% Homework/Quiz, cases, class discussion and projects, quizzes, lab exercises, mini-projects, 25% Midterm I, 25% Midterm II, 30% Final.
  - Lab exercises and mini-Projects (5%): Excel-based mini-projects based on the corresponding labs will be given. Both lab exercises and mini-projects will be graded.
  - Homework/Quiz/Class assignments (10%) : Problem sets on the material covered in class will be assigned as homework, almost weekly. Related questions will be asked in pop quizzes, which will be given generally on the due date of the homeworks. Moreover, in-class assignments will be given on the recent material covered in class.
  - Participation (5%) is the active involvement of students in class discussions. It is NOT mere attendance NOR asking insensible questions.
- **Make-up policy:** Make-ups will be given for an exam, if a student has a valid excuse for missing the exam. However, students should note that the make-up exams will be harder than the original exams since the students who take the make-up exams have the opportunity of learning about the questions. Moreover, it is student's responsibility to contact the instructor timely (specifically within a week from the exam) to prove that s/he has a valid excuse, and to arrange the time and place of the make-up exam.
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- **Schedule:** (tentative)

Sep 26: Introduction
Sep 28: Probabilistic Models (1.1,1.2)
Oct 3: Conditional Probability (1.3)
Oct 5: Total Probability Theorem and Bayes' Rule (1.4)
Oct 10: Independence (1.5, PS)
Oct 12: Counting (1.6)
Oct 17: More Counting (1.6, 1.7, LAB)
Oct 19: Probability Mass Functions (2.1,2.2)
Oct 24: Expected Values and Functions of Random Variables (2.3, 2.4, PS)
Oct 26: Mean, Variance, and Moments (2.4)
Oct 31: Joint PMFs of Multiple Random Variables (2.5, PS)
Nov 2: Seker Bayrami
Nov 7: Conditioning (2.6, LAB)
Nov 9: Review
Nov 14: Midterm I
Nov 16: Independence (2.7)
Nov 21: Continuous Random Variables and PDFs (3.1) (PS)
Nov 23: Cumulative Distribution Functions (3.2)
Nov 28: Normal Random Variables (3.3) (LAB)
Nov 30: Conditioning on an Event (3.4)
Dec 5: Multiple Continuous Random Variables (3.5) (PS)
Dec 7: Multiple Continuous Random Variables (3.5)
Dec 12: Derived Distributions (3.6) (PS)
Dec 14: Midterm II
Dec 19: Cancelled
Dec 21: Transforms (4.1)
Dec 26: Convolution (4.2) (PS)
Dec 28: Covariance and Correlation (4.5)
Jan 2: Least Squares Estimation (4.6) (LAB/PS)
Jan 4: Central Limit Theorem (7.4)
Jan 18: Final examination 09:00-12:00 ENG-Z50