

PURDUE UNIVERSITY  
School of Electrical Engineering  
**EE 302 Probabilistic Methods in Electrical and Computer Engineering**  
**Division 1 (MWF 3:30pm)**  
Class Information  
Spring 2002

**Prerequisites:** MA 262 or MA 266.

**Prerequisites by Topic:** basic calculus skills; differential equations; familiarity with basic concepts of circuits and linear system analysis, such as convolution; familiarity with Fourier analysis and two-sided transforms used in solving linear systems and differential equations.

**Corequisite:** EE 301.

**Instructor:** Professor Ilya Pollak  
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Office hours TBA.

**Course TA** Bin Ni  
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**Course Web Site:** <http://www.ece.purdue.edu/~ipollak/ee302>

**Required Text:**

*Introduction to Probability*, Dimitri P. Bertsekas and John N. Tsitsiklis, MIT class notes, 2000. Can be downloaded for free from <http://web.mit.edu/dimitrib/www/Probability.html> (*Note:* these notes are in a state of flux, as they are being prepared for publication as a book in June 2002. Therefore, there are certain additions to these notes which will not be made available electronically. The authors, however, have graciously agreed to make them available to us in the form of hard copies. Some of these additions will occasionally be distributed as handouts in class but **not** posted online. Since these handouts will be parts of the required text, you will have to make sure that you obtain a copy—either in class or from Bonnie Misner in MSEE 330.)

**Recommended Text:**

*Probability and Random Processes for Electrical Engineering*, 2<sup>nd</sup> edition, Alberto Leon-Garcia, Addison Wesley, 1994. ISBN 0-201-50037-X.

**Class mailing list:**

Please send a blank e-mail with subject EE 302 to [ipollak@ecn.purdue.edu](mailto:ipollak@ecn.purdue.edu)

**Course Outcomes:**

A student who successfully fulfills the course requirements will have demonstrated:

- i. an ability to solve simple probability problems in electrical and computer engineering applications;
- ii. an ability to model complex families of signals by means of random processes;
- iii. an ability to determine the random process model for the output of a linear system when the system and input random process models are known.

**Homework:**

Homework will be assigned on a weekly basis. Assignments will be due on Wednesday at 5:00PM. They will be posted on the course web site during the preceding week. No late assignments will be accepted for any reason.

The homework is a very important part of the course. You may read your lecture notes and the text, and think that you understand the material. However, when you attempt to work the homework problems, you will frequently find that you actually did not understand the material as well as you thought you did. Also, the problems on the exams will be very similar to the homework problems. Needless to say, your understanding of the material will not be improved if you simply copy your solutions from a friend. You will benefit most from the homework if you attempt to do the problems *before* consulting your friends. While it is perfectly reasonable to discuss your approach to solving the problems with a friend, the final write-up of the solution should be your own work.

**Rules for Preparing your Solutions:**

The grader will have to handle a lot of paperwork for the course, and wade through many pages of handwritten solutions. It will be to your benefit in terms of maximizing your grade, and will be greatly appreciated by us if you adhere to the following four rules when preparing your assignments:

- 1) Do not use paper torn out of a spiral bound notebook.
- 2) Write on only one side of each page.
- 3) Put the problems in the proper order.
- 4) Staple the pages together before turning in the assignment.

**Mid-term Examinations:**

There will be three one-hour evening exams. The dates for these exams are fixed and cannot be changed. They are:

**Wednesday, February 13, 8:30-9:30pm, in CL50 224**

**Tuesday, March 19, 7-8pm, in EE 129**

**Wednesday, April 17, 8:30-9:30pm, in EE 129**

Please schedule your plant trips and interviews so that they do not conflict with these dates. If anyone has a conflict with another evening exam or some other type of extraordinary circumstance, please let the instructor know. A plant trip or an extracurricular activity will not be considered an "extraordinary circumstance". In exceptional cases, you may be allowed to either take the exam at a different time, or to replace the score for that exam with your final exam score.

**Computation of Final Grade:**

Homework	10%
3 Hour Exams	50%
Final exam	35%
Instructor and TA's discretion	5%

Your lowest mid-term exam score will count for 10% of your final grade; the two others will count for 20% each. If you dispute your grade on any homework or hour exam, you have *one week* from the date that the graded paper was returned to you to request a change in the grade. After this time, no further change in grade will be considered. When you return your paper for a re-grade, please attach a sheet to the front, indicating where you think that your paper was graded incorrectly. Also, date the sheet. We reserve the right to re-grade the whole paper.

**Academic Dishonesty**

The ECE faculty expect every member of the Purdue community to practice honorable and ethical behavior both inside and outside the classroom. Any actions that might unfairly improve a student's score on homework or examinations will be considered cheating and will not be tolerated. Examples of cheating include (but are not limited to):

- Sharing results or other information during an examination.
- Bringing forbidden material or devices to an examination.
- Working on an exam before or after the official time allowed.
- Requesting a re-grade of answers or work that has been altered.
- Submitting homework that is not your own work or engaging in forbidden homework collaborations.
- Representing as your own work anything that is the result of the work of someone else.

At the professor's discretion, cheating on an assignment or examination will result in ***a failing grade for the entire course***, or a reduced grade, or a zero score for the particular assignment or exam. All occurrences of academic dishonesty will be reported to the Assistant Dean of Students and copied to the ECE Assistant Head for Education. If there is any question as to whether a given action might be construed as cheating, please see the professor or the TA before you engage in any such action.

**Web Site:**

Copies of most of the class handouts including this one will be available at the EE 302 web site

<http://www.ece.purdue.edu/~ipollak/ee302>.

(Certain handouts will only be available as hard copies—see the paragraph above regarding the required text.)