PURDUE
U N I V E R S I T Y

SCHOOL OF ELECTRICAL
AND COMPUTER ENGINEERING
UNDERGRADUATE COUNSELING OFFICE

To: The Engineering Faculty
From: School of Electrical and Computer Engineering
Re: ECE 30200

The School of Electrical and Computer Engineering has approved a change to the following course description. This action is now submitted to the Engineering Faculty with a recommendation for approval.

ECE 30200 Probabilistic Methods in Electrical and Computer Engineering
Semesters offered: Fall, Spring, Summer
Non-repeatable
Credit 3

Pre/Co-requisites: (MA 26200 or MA 26600 or MA 36600) and ECE 30100 [may be taken concurrently].

Course Description
FROM:
An introductory treatment of probability theory, including distribution and density functions, moments, and random variables. Applications of normal and exponential distributions. Estimation of means, variances, correlation, and spectral density functions. Random processes and responses of linear systems to random inputs.

TO:
An introductory treatment including probability of events, discrete and continuous random variables, multiple random variables, sums of random variables and long-term averages, and elementary random processes. Applications involving uniform, Gaussian, exponential, geometric and related random variables. Introduction to parameter estimation and hypothesis testing. Discussion of wide-sense stationary random processes, including correlation functions, spectral densities and the response of linear time invariant systems. Course examples are drawn from signal processing, wireless communications, system reliability, and data science.

Reason
ECE 30200 has evolved over the years and the course description needs to reflect how it is currently taught.

History of Previous Offering
This course has ran for over 10 years.

Michael R. Melloch, Associate Department Head of ECE