



Jordan University of Science and Technology
Faculty of Engineering
Electrical Engineering Department

EE360 Random Signal Analysis

Summer Semester 2019-2020

Course Catalog

3 Credit Hours. Probability principles and set theory. Random variables. Operations on random variables. Various distribution functions. Random processes: temporal and spectral characterization. Response of linear time-invariant systems to random inputs.

Text Book

Title	Probability, Random Variables and Random Signal Principles
Author(s)	Peyton Z. Peebles
Edition	4th Edition
Short Name	Text Book
Other Information	

Course References

Short name	Book name	Author(s)	Edition	Other Information
360-1	Probability and stochastic processes	Roy D. Yates and David J. Goodman	2nd Edition	
360-2	Probability and Random Processes for Electrical Engineering	Leon-Garcia	3rd Edition	
360-3	Probability and Random Processes	Geoffrey Grimmett and David Stirzaker	3rd Edition	

Instructor

Name	Dr. Mohammad Banat
Office Location	E1L3
Office Hours	

Email	banat@just.edu.jo
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Class Schedule & Room
Section 1: Lecture Time: Sun, Mon, Tue, Wed : 10:00 - 11:30 Room: منصة الكترونية

Prerequisites		
Line Number	Course Name	Prerequisite Type
242601	EE260 Signal And Systems Analysis	Prerequisite / Pass

Tentative List of Topics Covered		
Weeks	Topic	References
Weeks 1, 2	Introduction to Probability Theory	From Text Book
Weeks 3, 4, 5, 6, 7	Random Variables and Distribution and Density Functions	From Text Book
Week 7	Operations on a Single Random Variables	From Text Book
Weeks 8, 9	Multiple Random Variables	From Text Book
Weeks 10, 11, 12	Operations on Multiple Random Variables	From Text Book
Weeks 12, 13, 14	Random Processes	From Text Book
Weeks 15, 16	Spectral Analysis and Filtering of Random Processes	From Text Book

Mapping of Course Outcomes to Program Student Outcomes	Course Outcome Weight (Out of 100%)	Assessment method
Recognizing the role of probability in science and engineering [1ABET1]	5%	
Understanding basics of set theory [1ABET1]	5%	
Understanding the axioms of probability [1ABET1]	5%	
Understanding the concepts of discrete and continuous single and multiple random variables [1ABET1]	12%	
Understanding the concepts of distribution and density functions [1ABET1]	12%	
Understanding and applying the concepts of moments and moment generating functions [1ABET1]	12%	
Being able to determine probabilities using distribution and density functions [1ABET1]	12%	
Being able to perform random variable transformations [1ABET1]	12%	
Understanding the concept of a random process [1ABET1]	5%	
Being able to characterize random processes in the time domain [1ABET1]	5%	

Being able to characterize random processes in the frequency domain [1ABET1]	5%	
Being able to use time domain input/output relationships of linear time invariant systems with random inputs [1ABET1]	5%	
Being able to use frequency domain input/output relationships of linear time invariant systems with random inputs [1ABET1]	5%	

Relationship to Program Student Outcomes (Out of 100%)						
ABET1	ABET2	ABET3	ABET4	ABET5	ABET6	ABET7
100						

Evaluation	
Assessment Tool	Weight
quizzes and assignments	40%
Final Exam	60%

Policy	
Attendance	Students are required to attend classes. Absence may result in dismissal or losing class work marks.

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