ECE3720, Engineering Probability & Statistics, Spring 2017 Draft: 2/26/2017

Instructor: Kevin Buckley, Tolentine 433a, 519-5658, buckley@ece.vill.edu, www.ece.vill.edu/user/buckley

Office Hours:

* Mon. & Wed. 11:30 am - 12:20 pm; Thurs. 12 noon - 2 pm; Fri. 9:30-10:20am Fri. 9:30am - 10:20am; by appointment; and feel free to stop in anytime I'm available

Prerequisite: Calc II; some Matlab; some basic circuits (i.e. simple signals & systems)

Lectures: Tues./Thurs. 2:30 pm - 3:45 pm; Tolentine 215

Grading Policy:

* Weekly Homeworks: Assigned each Thursday for following Thursday, but not collected

* Matlab Computer Assignments: Throughout semester - 10 %

 \ast 15 Min. Quizzes: Each Thursday (drop lowest 3 grades) - 20 %

* Two Tests: Thurs. 2/23, Thurs. 4/6 - 20 % each

* Final: Mon. 5/8, 2:30-4:30pm 30 %

Text: Elements of Engineering Probability & Statistics by Roger Ziemer, Prentice-Hall, 1997.

References:

1. Probalility, Random Variables, and Random Signal Principles, 3-rd ed., by Peyton Peebles.

Course Description: This course introduces the theory and practices of probability and statistics. Fundamental topics covered are probability, random variables and the *probability density function*, moments such as mean and variance, basic statistical methods and an introduction to random signals. The following *case studies* will be considered throughout the course to illustrate the use of fundamental topics: digital communications, optical detection, quantization, matched filters and random process spectral content. Computer simulations will constitute an integral part of the learning process.

Course Objectives:

- 1. Students will gain experience using basic probability to solve engineering problems;
- 2. Students will become familiar with, and learn to work with, random phenomena represented by Random Variables (RVs) and Random Processes (RPs);
- 3. Students will explore some engineering applications of RVs and RPs; and
- 4. Students will use Matlab to work with (i.e. simulate and evaluate) RVs and RPs.

Villanova Disabilities Statement:

It is the policy of Villanova to make reasonable academic accommodations for qualified individuals with disabilities. If you are a person with a disability (non-physical) please register with the Learning Support Office by contacting Learning.support.services@villanova.edu or 610-519-5176 as soon as possible. Registration is needed in order to receive accommodations.

The Office of Disability Services collaborates with students, faculty, staff, and community members to create diverse learning environments that are usable, equitable, inclusive and sustainable. The ODS provides Villanova University students with physical disabilities the necessary support to successfully complete their education and participate in activities available to all students. If you have a diagnosed disability and plan to utilize academic accommodations, please contact Gregory Hannah, advisor to students with disabilities at 610-519-3209 or visit the office on the second floor of the Connelly Center.