

## **Engineering Tripos Part IB, 2P7: Probability, 2018-19**

### **Leader**

[Prof C Rasmussen](#) [1]

### **Timing and Structure**

1 or 2 lectures per week in weeks 1-4. 6 lectures.

### **Aims**

The aims of the course are to:

- Show how concepts of probability can be applied to engineering applications.

### **Objectives**

As specific objectives, by the end of the course students should be able to:

- Explain and use simple ideas of probability, mean, variance, etc.
- Manipulate random variables and probability density functions.
- Solve simple statistical problems of engineering importance.

### **Content**

#### **Probability and Statistics**

- Probability.
- Conditional probability and independence.
- Permutations and combinations.
- Binomial and Poisson distributions.
- Expectation of a discrete random variable.
- Variance and standard deviation.
- Probability density function for a continuous random variable.
- Mean and variance.
- Normal and exponential distribution.
- Tests of significance and confidence intervals

#### **Further Information**

Further information, including details of each lecture and hand-outs are available here:

<http://mlg.eng.cam.ac.uk/teaching/1BP7> [2]

### **Booklists**

Please see the [Booklist for Part IB Courses](#) [3] for references for this module.

### **Examination Guidelines**

Please refer to [Form & conduct of the examinations](#) [4].

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### Links

[1] <mailto:cer54@cam.ac.uk>

[2] <http://mlg.eng.cam.ac.uk/teaching/1BP7>

[3] <https://www.vle.cam.ac.uk/mod/book/view.php?id=364081&chapterid=43861>

[4] <https://teaching.eng.cam.ac.uk/content/form-conduct-examinations>