

## **Engineering Tripos Part IB, 2P7: Probability, 2024-25**

### **Course Leader**

[Dr T Savin](#) [1]

### **Lectures**

[Dr T Savin](#) [1]

### **Timing and Structure**

Week 1, 1 lecture; weeks 2-4, 2 lectures per week. 7 lectures total. Weeks 1-4, one online Q&A session per week.

### **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
- Expectation of a random variable
- Probability density function for a continuous random variable
- Key discrete probability mass functions
- Key continuous probability density functions
- Functions of random variables
- Multivariate distributions
- Decision and estimation: basic definitions
- Tests of significance

#### **Further Information**

Further information, including details of each lecture and hand-outs are available on the course moodle site.

### **Booklists**

Please refer to the Booklist for Part IB Courses for references to this module, this can be found on the associated Moodle course.

### Examination Guidelines

Please refer to [Form & conduct of the examinations](#) [2].

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### Links

[1] <mailto:ts573@cam.ac.uk>

[2] <https://teaching24-25.eng.cam.ac.uk/content/form-conduct-examinations>