

Subject CT4

Corrections to 2015 study material

Comment

This document contains details of any errors and ambiguities in the Subject CT4 study materials for the 2015 exams that have been brought to our attention. We will incorporate these changes in the study material each year. We are always happy to receive feedback from students, particularly details concerning any errors, contradictions or unclear statements in the courses. If you have any such comments on this course please email them to CT4@bpp.com.

You may also find it useful to refer to the Subject CT4 Frequently Asked Questions thread on the Actuarial Discussion Forum. (You can reach the Forums by clicking on the “Discussion Forum” button in the bottom left-hand corner of ActEd’s website, or by going to www.acted.co.uk/forums/.) This contains useful questions asked by students studying Subject CT4, with answers written by ActEd’s tutors.

Important note

This document was last updated on 10 July 2015.

Course Notes

Chapter 6

Solution 6.4 (added 10 July 2015)

In the first line of the solution, $p_{SD}(s,t)$ should be $p_{DS}(s,t)$.

Chapter 10

Page 9

In the first line of the second paragraph, “exposed too risk” should be “exposed to risk”.

Question 10.4

This question should refer to the initial exposed to risk, E_{50} , rather than the central exposed to risk E_{50}^c .

Page 28

The solution to Question 10.4 should read:

$$E_{50} = E_{50}^c + \frac{1}{2}d = 2,250 + \frac{1}{2} \times 4 = 2,252$$

Q&A Bank (added 10 July 2015)

Solution 2.13(ii)

The last row of the probability matrix for the jump chain should be 0 0 0 0 1 rather than 0 0 0 0 0 .

Flashcards

Chapter 12

Card 37a

The critical value given here for $n_1 = 18$ and $n_1 = 12$ should be 5 and NOT 4.

ASET and Revision Booklet 5 (added 21 May 2015)

April 2014, Question 6, part (ii)

The solution given in ASET and the Revision Booklets is the same as that in the Examiners' Report. An alternative approach is given below.

Four buses arrived during the period 4pm to 6.10pm. However, there are gaps in this period during which no-one was at the bus stop, so the length of the observation period is not the full 2 hours and 10 minutes. For example, if a bus had arrived at 4.07pm, its arrival would not have been recorded.

There is at least one person waiting at the bus stop during the following intervals:

| Interval | Length of interval (minutes) |
|---------------|------------------------------|
| 4pm-4.05pm | 5 |
| 4.10pm-4.35pm | 25 |
| 4.40pm-4.50pm | 10 |
| 4.55pm-6.10pm | 75 |

So the bus stop was “observed” for a total of 115 minutes or $\frac{115}{60}$ hours between 4pm and 6.10pm. So the estimated arrival rate of buses is:

$$\frac{4}{115/60} = \frac{48}{23} = 2.087 \text{ per hour}$$

Note that dividing the number of students who caught a bus by the total observed waiting time for all the students gives the answer:

$$\frac{6}{180/60} = \frac{6}{3} = 2 \text{ per hour}$$

This is an estimate of the rate at which students catch a bus, rather than an estimate of the arrival rate of buses.