Probability models 780 (BHM 780)

Qualification	Postgraduate
Faculty	Faculty of Engineering, Built Environment and Information Technology
Module credits	16.00
Prerequisites	No prerequisites.
Contact time	24 contact hours per semester
Language of tuition	English
Academic organisation	Industrial and Systems Eng
Period of presentation	Semester 1 or Semester 2

Module content

The objective of the module is that students be exposed to probability theory, learn the ability to follow fairly involved theoretical reasoning, continue to learn how to reason mathematically, and solve problems of a more practical nature.
It covers:
• Probability theory: Random variables and random vectors, Sequence of random variables, Transformation of Probability distributions
• Stochastic Processes: Examples of stochastic processes; various types of stochastic processes
• Poisson Processes: Homogeneous and non-homogeneous stochastic processes with examples
• Renewal Processes: Renewal functions; ordinary and delayed renewal processes; Regenerative stochastic processes
• Discrete-time Markov chains: continuous time Markov chains with focus on examples in Reliability, queuing and inventory models.

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