

# QUEUEING THEORY AND ITS APPLICATIONS TO THE PERFORMANCE ANALYSIS OF COMPUTER SYSTEMS

presented by

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## Contents

### November 3:

Exponential distribution and its properties, Poisson process, Markov Chains, Birth-Death Processes, Queueing Systems, Kendall's Notation.

### November X:

Markov-type Queueing Systems (M/M/1, M/M/n/n, M/M/1//n ) and their investigations.

### November 10:

Modeling tools, Retrial Queueing Systems, Case Studies

## References

### Lecture Notes of Janos Sztrik:

[http://irh.inf.unideb.hu/~jsztrik/education/16/IRMA\\_Main\\_Angol.pdf](http://irh.inf.unideb.hu/~jsztrik/education/16/IRMA_Main_Angol.pdf)

[http://irh.inf.unideb.hu/~jsztrik/education/16/SOR\\_Main\\_Angol.pdf](http://irh.inf.unideb.hu/~jsztrik/education/16/SOR_Main_Angol.pdf)

### e-notes:

<http://web2.uwindsor.ca/math/hlynka/qonline.html>

from which I recommend 1, 2

### Tool:

<http://irh.inf.unideb.hu/user/jsztrik/education/09/english/index.html>

<http://web2.uwindsor.ca/math/hlynka/qsoft.html>

## Exercises

1. Find the distribution function of the response time at an M/M/1 system
2. Prove the recurrence relation for the Erlang-blocking probabilities