

# *The Hebrew University of Jerusalem*

## *Syllabus*

### **APPLIED PROBABILITY - 52819**

*Last update 19-03-2025*

*HU Credits:* 3

*Degree/Cycle:* 2nd degree (Master)

*Responsible Department:* Statistics

*Academic year:* 0

*Semester:* 2nd Semester

*Teaching Languages:* Hebrew

*Campus:* Mt. Scopus

*Course/Module Coordinator:* Prof. Offer Kella

*Coordinator Email:* [offer.kella@gmail.com](mailto:offer.kella@gmail.com)

*Coordinator Office Hours:* By appointment

*Teaching Staff:*

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Prof. Offer Kella

Course/Module description:

*This course is intended to develop the knowledge of the students in stochastic processes and models with an emphasis on queueing theory.*

Course/Module aims:

*To prepare the students for research in applied probability, in general and in queueing theory in particular*

Learning outcomes - On successful completion of this module, students should be able to:

*To be able to understand research papers in applied probability and to enable the students begin to develop learning and research skills in the area.*

Attendance requirements(%):

*no*

*Teaching arrangement and method of instruction: Frontal teaching homework assignments.*

Course/Module Content:

*Little's formula, Renewal theory, continuous time Markov chains. Queueing theory: single server queues, open and closed networks of queues.*

Required Reading:

*None.*

Additional Reading Material:

*Soren Asmussen, Applied Probability and Queues, 2nd Edition, Springer*

Grading Scheme:

*Written / Oral / Practical Exam 100 %*

Additional information:

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*Prerequisites:*  
*52817 - Probability and Stochastic Processes or equivalent, with instructor's approval.*