Course: Performance Analysis of Computer Networks
Lecturer: János Sztrik
Course code: INGV724-K5
Semester: 1
Type: Lecture/Laboratory
Lessons/Week: 2+2
Credit: 5
Status: Normal/ Exam course
Requirement: INGK131E

Competence: After the course the students will be able to design of simpler computer networks

Exam type: Written (Oral)

Requirement of signature of laboratory works: given by the lecturer at the beginning of the semester based on the work of the student and the written test

Weekly schedule of the lectures:

Refressment from the earlier topics concerning this course.

Classification of Queueing Systems, Kendall's notation

M/M/1-type systems

M/M/1- type systems, derivation of performance measures

M/M/1-type queueing networks

M/G/1- type systems

M/M/n-type systems, finite capacity systems, examples

Erlang-loss system

Finite-source loss systems

Finite-source systems, examples, applications

M/M/r/ /n –type systems

Software tools

Case studies

Case studies

Szoftver:

Recommended References

- **K. Begain, G. Bolch, H. Herold**: *Practical Performance Modelling,* Boston, Kluwer Academic Publisher, 2001
- **G. Bolch, S. Greiner, H.de Meer, K. Trivedi**: *Queueing Networks and Markov Chains,* New York, Wiley-Interscience, 1998
- **B. Haverkort:** *Performance of computer communication systems: a model-based approach,* New York, John Wiley and Sons, 1998.
- **J.F. Hayes, T.V.J. Ganes Babu:** *Modeling and Analysis of Telecommunication Networks,* Wiley Interscience**,** 2004.
- **R. Jain:** *The Art of Computer Systmes Performance Analysis*, New York, John Wiley and Sons, 1991
- **L. Kleinrock**: *Queueing systems,* Vol. II: Computer Applications, New York, Wiley-Interscience, 1976.
- **J. Sztrik**: http://irh.inf.unideb.hu/user/jsztrik/education/lectures.htm
- **K.S. Trivedi:** *Probability and Statistics with Reliability, Queueing and Computer Science Applications*, Prentice-Hall, Englewood Cliffs, 1982.

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