



Universidad
Carlos III de Madrid
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Simulation of Networks and Telematics Applications

MsC in Telematics Engineering

Dept. Ingeniería Telemática
2013/2014

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Requirements

- **Statistics:**
 - Basic concepts: Mean, median, mode, std. dev.
 - Descriptive: PDF, CDF, percentile.
- **Programming:**
 - Lists, loops, while(s)
 - C-alike, Matlab-alike.



Learning Results

- Understanding of the basic building blocks of a simulation tool
- Ability to:
 - Design a simulation model adapted to a case study
 - Use a simulation tool in the field of telematics engineering
 - Develop the analysis tools needed to obtain results with statistical significance



Syllabus

- (basic) Descriptive statistics
- Random number generation
- Transient analysis:
 - When to start
 - When to end
- Event-driven Simulation
- Use of simulation tool
 - OMNeT++



Assessment

- No final test
- Laboratory sessions (see schedule) will be the basis for the assessment
- Assessment based on:
 - Handing in a report
 - In class
 - A week after
 - Q&A during class



Course Schedule

Date	Room	Description
24/09/2013	4.1E02	Presentation
08/10/2013	4.1E02	Basic Statistics
15/10/2013	4.1B02	LAB
22/10/2013	4.1E02	Random Variable Generation
29/10/2013	4.1B02	LAB
05/11/2013	4.1E02	Transient and Steady states
12/11/2013	4.1E02	Event-Driven Simulation
19/11/2013	4.1B02	LAB
26/11/2013	4.1B02	LAB
03/12/2013	4.1E02	Use of a simulation tool
10/12/2013	4.1B02	LAB
17/12/2013	4.1B02	LAB

Bibliography

- Sheldon M. Ross, “*Introduction to probability models*”, 10th ed. Elsevier, 2010.
- Averill M. Law, “*Simulation Modeling & Analysis*”, 4th ed. McGraw-Hill , 2007.
- Sheldon M. Ross, “*Simulation*”, 5th ed. Academic Press, 2012.

