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<th><strong>Cycle/Year/Semester</strong></th>
<th>Master / 2010 / 1st Semester</th>
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<td><strong>Type</strong></td>
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<td><strong>Credits</strong></td>
<td>5 (1.25 T + 3.75 P)</td>
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<td><strong>ECTS Credits</strong></td>
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<td><strong>Department</strong></td>
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**Objectives**

This course is an introduction to discrete-event simulation, with practical application to mobile networks.

**Coordinator**

Manuel Álvarez

**Professors**

David Fernández. david arroba dit punto upm punto es
Manuel Álvarez, mac arroba dit punto upm punto es

**Syllabus**

**Part I. Simulation basics (1.25 credit)**

- Introduction. Steps in a simulation study.
- Output data analysis.
- Simulation languages and tools.
- Introduction to OPNET Modeler.

**Part II. Simulation of UMTS networks (3.75 credits)**

OPNET Modeler will be used to simulate several UMTS network configurations, taking into account the following aspects:

- Traffic profiles for different applications.
- End-to-end performance evaluation.
- Impact of UMTS network topology, number of nodes, and link capacities.
- Admission control, QoS negotiation.
- Terminal mobility and handovers.

**Course’s Web**

https://moodle.lab.dit.upm.es/moodle/course/view.php?id=56

**Department’s Web**

www.dit.upm.es