



greenet



# 4th GreenNet Seminar



## Stochastic models for networks and wireless communications

Wednesday 31 October and Thursday 1 November 2012

1<sup>st</sup>Day –Wednesday 31 October 2012

Module I	Speaker	Title	Syllabus
9:30-11:00	Dr. Paolo Rocca	Networks Models for Wireless Communication Systems	<ul style="list-style-type: none"> <li>• Introduction to network models</li> <li>• Deterministic and stochastic models</li> <li>• Discrete and continuum models</li> </ul>
11:00-11:30	Coffee break		
11:30-13:00	Dr. Paolo Rocca	Stochastic Models for Wireless Communication Networks	<ul style="list-style-type: none"> <li>• Random walk theory</li> <li>• Percolation theory</li> </ul>
13:00-14:30	Lunch break		
14:30-16:00	Dr. Paolo Rocca	Connectivity and Information Flow	<ul style="list-style-type: none"> <li>• Connectivity in stochastic networks</li> <li>• Achievable bit-rate bounds</li> </ul>
16:00-16:30	Coffee break		
16:30-18:00	Prof. Symeon Papavassiliou	Exploiting Network Utility Maximization (NUM) in Advanced Wireless Networking	<ul style="list-style-type: none"> <li>• Network Utility Maximization (NUM) Basics</li> <li>• NUM for Radio Resource Allocation</li> <li>• Energy Efficiency, Power and Rate Control</li> </ul>

2<sup>nd</sup>Day –Thursday 1 November 2012

Module I	Speaker	Title	Syllabus
9:00-10:30	Prof. Symeon Papavassiliou	Complex Evolving Networks (Introduction) (1/2)	<ul style="list-style-type: none"> <li>• Complex Networks (CNs) and Network Science</li> <li>• Definition &amp; properties of metrics features</li> <li>• Types of Complex Networks</li> </ul>
10:30-11:00	Coffee break		
11:00-12:30	Dr. Vasileios Karyotis	Complex Evolving Networks (2/2)	<ul style="list-style-type: none"> <li>• Topology Control</li> <li>• Topology-evolving &amp; decentralized wireless networks</li> <li>• Applications: Trust Management and Content Distribution in Wireless Networks</li> </ul>
12:30-13:00	Coffee break		
13:00-14:30	Dr. Vasileios Karyotis	Stochastic Modelling of Malware Propagation	<ul style="list-style-type: none"> <li>• Introduction to Malware Diffusion</li> <li>• Queuing based Modeling of Malware Propagation</li> <li>• Optimal Control of Malware Propagation</li> </ul>
14:30	Lunch		