Module Name: Network and Services Management

Module Acronym: NSM

Module Manager: Prof. George Pavlou

Course Summary:
This course introduces principles, frameworks, technologies and protocols used for network and service management in both Telecommunication and Internet Service Provider networks. It starts with an introduction to the network & service management functional areas and then discusses the manager-agent and distributed system models. It continues with an in-depth examination of SNMP, CMIS/P, CORBA and Web Services as management technologies. The course concludes with in-depth case studies of IP network configuration for traffic engineering, both intra- and inter-domain, and IP quality of service management.

Intended Learning Outcomes:
On completion of this course, students should be able to:

- Understand network and service management principles and categorise relevant activities in the five functional areas.
- Understand the details of the manager-agent and distributed system models
- Get to know how Internet SNMP, OSI CMIS/P, OMG CORBA and Web Services are used for network and service management and understand the relevant strengths and limitations
- Understand how IP networks are traffic-engineered and provisioned both intra- and inter-domain in order to be able to cope with the expected traffic demand
- Understand how IP networks are monitored and continuously re-configured in order to offer guaranteed quality of service to customers

Course Content
- Network and service management principles and functional areas
- The manager-agent and distributed object models
- Internet SNMP, OSI CMIS/P, OMG CORBA and Web Services as management technologies
- IP network monitoring and configuration for intra-domain Traffic Engineering
- IP network configuration for inter-domain Traffic Engineering
- IP network monitoring and re-configuration for quality of service management

Assessment:
A 2.5 hour unseen written examination will be held under UCL MSc examination regulations at UCL.

Tutorials/Workshops:
There will be a laboratory session to consolidate the material taught in the lectures and demonstrate how SNMP management applications are used in practice. The tutorial will have a two hour format.