UNIVERSITY OF DELAWARE
DEPARTMENT OF COMPUTER & INFORMATION SCIENCES

CISC 853-010: Network Management

Spring Semester, 2015
Mon and Wed, 3:35 - 4:50 pm
Purnell 233A

Professor: Adarsh Sethi
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Office Hours: Mon, 10 am - 12 pm
and by appointment

Course Outline:

Introduction to network management concepts. Network management architectures and protocols. The Internet and OSI frameworks, management functionalities, management domains and objects, protocols and services (SNMP, SNMPv2, SNMPv3, CMIS/CMIP). Remote monitoring (RMON). Other management frameworks: DMTF, Web-based management, JMX. Interoperability between management frameworks. Design of management agents (servers) and clients. Recent developments in the IETF. If time permits, selected management applications such as Fault Management and Configuration Management will also be discussed.

Required Background:

CISC 650 (Computer Networks) or an equivalent networking course is an essential pre-requisite. Proficiency in C/C++ is also required.

Textbook:

Network Management: Principles and Practice by Mani Subramanian. Addison-Wesley, Second edition, 2011.

Course Contents:

1. Introduction to Management (Chapter 1).
2. Introduction to Basic Management Concepts and Architectures, ASN.1 (Chapter 3).
3. Internet Management: SNMP v1, v2, v3. (Chapters 4, 5, 6, and 7).
4. Remote Monitoring: RMON (Chapter 8).
5. OSI Management: CMIS/CMIP (Appendix A).
6. Other Management Frameworks: DMTF, Web-based Management, CORBA, XML, JMX (Chapter 16).
7. Interoperability between Management Frameworks (from outside sources).
8. Recent developments in the IETF (from outside sources).
9. Configuration, Performance, and Fault Management (Chapter 11) (if time permits).