

# TDC 568 – Network Management

## Spring 2018/2019

**Instructor** Ahmad Abusini

**Office Hours** Tuesday 5:00-5:45PM and 9:00PM -9:45PM CDM 428

**Course Website** <http://d2l.depaul.edu>

**E-mail** [aabusini@depaul.edu](mailto:aabusini@depaul.edu)

**Meeting time** Tuesday 5:45PM - 9:00PM

**Location** CDM 206

---

### Text:

- ADVANCES IN NETWORK MANAGEMENT, Author: DING, Publisher: TAYLOR, Edition: 10, Price: 87.95 USD ISBN 9781420064520 - **Required**
- NETWORK MANAGEMENT FUNDAMENTALS, Author: CLEMM, Publisher: PEARSON, Edition: 07, Price: 65.00 USD ISBN 9781587201370 - **Recommended**
- EBK ADVANCES IN NETWORK MANAGEMENT, Author: DING, Publisher: YUZU, Edition: 1, Price: 29.00 USD ISBN 8220100693908 - **E-book**

### Description:

Network management encompasses the tasks associated with planning, deploying, configuring, operating, monitoring, tuning, repairing, and changing the telecommunications and data networks. This course explores the five functional areas of network management: fault management, configuration management, accounting management, performance management, and security (FCAPS). Topics such as fault diagnosis and isolation, event correlation, MIB architecture, scripting for task automation, performance monitoring, service level agreements (SLA) conformance are also discussed. The course provides a balance of theories (SNMP, Netconf, and IPFIX) and practices (hands-on lab exercises), and students can apply the knowledge to effectively manage a production network in both enterprise and service provider environments.

### Course objectives and Goals:

- Describe the five functional areas of network management
- Specify the requirements of network management protocols and discuss the strengths and weaknesses of the commonly used Simple Network Management Protocol (SNMP).
- Use a MIB browser to navigate the MIB tree
- Use Syslog and SNMP trap to do fault and performance management.
- Identify the weaknesses of SNMP and describe the strengths of Netconf to address those issues.
- Use a script language (expect) to automate network management tasks
- Use open source or shareware tools for network flow analysis
- Use open source or shareware tools for performance management
- Design a policy-based network management framework

### Course Breakdown:

- 35% - Homework (7 @ 5% each)
- 15% - Lab Assignments (3 @ 5% each)
- 25% - Midterm
- 25% - Final Exam

**Prerequisites:**

TDC 463

**Grading Scale**

A = 90% - 100%

A- = 88% - 90%

B+ = 86%-88%

B = 80% - 86%

B- = 78% - 80%

C+ = 76% - 78%

C = 70% - 76%

C- = 68% - 70%

D+ = 66% - 68%

D = 60% - 66%

F = 0% - 60%

**Course Schedule:**

Week	Date	Course Description	chapters	Assignments
1	04/02/2018	Course overview, Introduction	Ch 1,2	hw01
2	04/09/2018	Network Management Functions and Architecture	Ch 3,4	hw02
3	04/16/2018	SNMP	Ch 6	lab01 (SNMP) & hw03
4	04/23/2018	MIB and Data Model	Ch 6	hw04
5	04/30/2018	Midterm		
6	05/07/2018	Netconf and YANG		lab02 (Netconf) & hw05

7	05/14/2018	Network Flow Analysis and Performance Management	Ch 8(NetFlow)	hw06
8	5/21/2018	Fault Management: SNMP Trap and Syslog	Ch 8(Syslog)	hw07
9	05/28/2018	Network Task Automation (expect)		lab03 (expect)
10	06/04/2018	Autonomous Network Management (TBD)	Ch 6	
	06/11/2018	Final Exam		

### Course Policies:

#### Changes to Syllabus

This syllabus is subject to change as necessary during the quarter. If a change occurs, it will be thoroughly addressed during class, posted under Announcements in D2L and sent via email.

#### Online Course Evaluations

Evaluations are a way for students to provide valuable feedback regarding their instructor and the course. Detailed feedback will enable the instructor to continuously tailor teaching methods and course content to meet the learning goals of the course and the academic needs of the students. They are a requirement of the course and are key to continue to provide you with the highest quality of teaching. The evaluations are anonymous; the instructor and administration do not track who entered what responses. A program is used to check if the student completed the evaluations, but the evaluation is completely separate from the student's identity. Since 100% participation is our goal, students are sent periodic reminders over three weeks. Students do not receive reminders once they complete the evaluation. Students complete the evaluation online in [CampusConnect](#).

#### Academic Integrity and Plagiarism

**All assignments must be completed individually.** This course will be subject to the university's academic integrity policy. More information can be found at <http://academicintegrity.depaul.edu/>. If you have any questions be sure to consult with your professor.

#### Academic Policies

All students are required to manage their class schedules each term in accordance with the deadlines for enrolling and withdrawing as indicated in the [University Academic Calendar](#). Information on enrollment, withdrawal, grading and incompletes can be found at: [cdm.depaul.edu/enrollment](http://cdm.depaul.edu/enrollment).

### **Students with Disabilities**

Students who feel they may need an accommodation based on the impact of a disability should contact the instructor privately to discuss their specific needs. All discussions will remain confidential.

To ensure that you receive the most appropriate accommodation based on your needs, contact the instructor as early as possible in the quarter (preferably within the first week of class), and make sure that you have contacted the Center for Students with Disabilities (CSD) at: [csd@depaul.edu](mailto:csd@depaul.edu).

Lewis Center 1420, 25 East Jackson Blvd.

Phone number: (312)362-8002

Fax: (312)362-6544

TTY: (773)325.7296

### **Incomplete Grades**

An incomplete grade is a special, temporary grade that may be assigned by an instructor when unforeseeable circumstances prevent a student from completing course requirements by the end of the term and when otherwise the student had a record of satisfactory progress in the course. All incomplete requests must be approved by the instructor of the course and a CDM Associate Dean. Only exceptions cases will receive such approval. Information about the Incomplete Grades policy can be found at <http://www.cdm.depaul.edu/Current%20Students/Pages/Grading-Policies.aspx>

### **Proctored exams for Online Students**

If you are an online learning student living in the Chicagoland area (within 30 miles of Chicago), you will need to come to one of DePaul's campuses to take an exam. Online learning students outside of the Chicagoland area are required to locate a proctor at a local library, college or university. You will need to take the exam within the window your instructor gives. Students should examine the course syllabus to find exam dates and the instructor's policy on make-up exams. Detailed information on proctored exams for online learning students can be found at <http://www.cdm.depaul.edu/onlinelearning/Pages/Exams.aspx>