

INTERNET MANAGEMENT AND MEASUREMENT

265310

MSc TEL/INF/BIT/EL

5 EC

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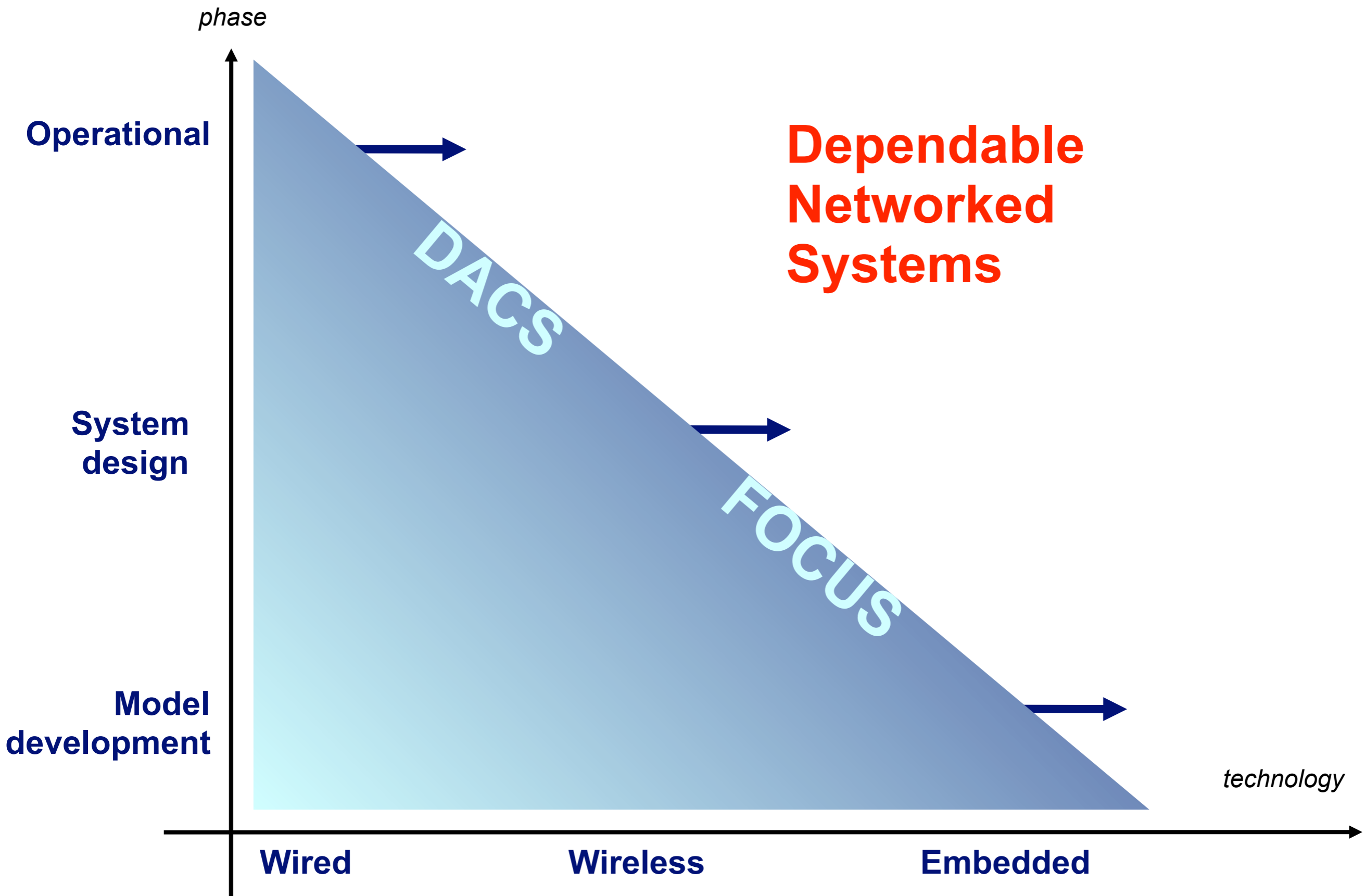
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PURPOSE OF THIS COURSE

THE PURPOSE OF THIS COURSE
IS TO GET AN UNDERSTANDING OF:

- WHICH MANAGEMENT INFORMATION EXISTS WITHIN THE INTERNET
 - WHO DEFINES THIS INFORMATION
- THE SYNTAX IN WHICH THIS INFORMATION IS DESCRIBED
 - THE PROTOCOLS THAT ALLOW THIS INFORMATION TO BE MONITORED / MODIFIED
- HOW TO MEASURE THE FLOW OF INTERNET DATA

MATERIAL

BOOK

William Stallings: SNMP, SNMPv2, SNMPv3, RMON 1 & 2;
Addison Wesley, ISBN 0-201-48534-6

PODCAST / REAL MEDIA PRESENTATIONS

<http://www.simpleweb.org/tutorials/video/>

SLIDES

<http://www.simpleweb.org/tutorials/slides.html>

EXERCISES

<http://www.simpleweb.org/tutorials/exercises.html>

BLACKBOARD WEBSITE

COURSE ORGANIZATION

COURSE CONSISTS OF THREE ELEMENTS:

- FIVE LECTURES IN CLASS ROOM
- TWO LECTURES AS SELF STUDY
 - SEVEN EXERCISES

Classroom lectures

Lecture	Date	Location	Teacher	Topic
1	18/4/2011 13:45-15:30	Zilverling 5126	Ramin Sadre	Course intro and intro measurements
2	2/5/2011 13:45-15:30	Zilverling 5126	Ramin Sadre	Network measurements
3	9/5/2011 13:45-15:30	Zilverling 5126	Aiko Pras	SNMP versions 1 and 2
4	16/5/2011 13:45-15:30	Zilverling 5126	Aiko Pras	SNMP version 3
5	30/5/2011 13:45-15:30	Zilverling 5126	Aiko Pras	New approaches for network management

NOTE: No lecture on 23/5/2011

Slides of the classroom lectures can be found at:

http://www.simpleweb.org/wiki/Internet_Management_Tutorials

Book is: William Stallings: SNMP, SNMPv2, SNMPv3, RMON 1 & 2, Addison Wesley, ISBN 0-201-48534-6

Video lectures

Lecture	Follow before	Topic
1	2/5/2011	Management standards
2	2/5/2011	Introduction to SNMP
3	2/5/2011	Structure of Management Information (SMI)
4	9/5/2011	Introduction to Management Information Bases (MIBs)
5	9/5/2011	MIB-II

Video lectures 1, 2 and 3 are needed to answer exercise 1

Video lectures 4 and 5 are needed to answer exercise 2

Video lectures can be found at:

http://www.simpleweb.org/wiki/Video_tutorials_on_Internet_management

Mapping book - lectures

Book Chapter	Lecture	Topic of the lecture
1	Classroom 1	Course intro
2	Classroom 1	Course intro
4	Classroom 1 Video 2	Course intro
5	Video 3	Structure of Management Information (SMI)
6	Video 4 & 5	Management Information Bases (MIBs)
7	Classroom 3	SNMP versions 1 and 2
11	Video 3	Structure of Management Information (SMI)
12	Classroom 3	SNMP versions 1 and 2
15	Classroom 4	SNMP version 3
16	Classroom 4	SNMP version 3
17	Classroom 4	SNMP version 3

Mapping slides - lectures

Slide titles	Lecture	Topic of the lecture
<ul style="list-style-type: none"> • About this course • Ad-hoc approaches to network management • Network management standards • Intro to SNMP 	Classroom 1 Video 1 Video 2	Course intro
<ul style="list-style-type: none"> • Internet measurements 	Classroom 1 Classroom 2	Measurements
<ul style="list-style-type: none"> • SMIv1, SMIv2 	Video 3	Structure of Management Information (SMI)
<ul style="list-style-type: none"> • Introduction • Relation between MIBs • MIB-II • SNMPv2 MIB • Interfaces MIB • IP MIB • TCP MIB • UDP MIB • Host resources MIB • 	Video 4 & 5	Management Information Bases (MIBs)
<ul style="list-style-type: none"> • SNMP version 1 • SNMP version 2 	Classroom 3	SNMP versions 1 and 2
<ul style="list-style-type: none"> • SNMP version 3 	Classroom 4	SNMP version 3
<ul style="list-style-type: none"> • New approaches: COPS-PR and NetConf • New approaches: Web-services for management 	Classroom 5	New New approaches for network management

Exercises and deadlines

Exercise	Deadline	Topic
1	2/5/2011	Structure of Management Information (SMI)
2	9/5/2011	Management Information Bases (MIBs)
3	16/5/2011	Decode an SNMP packet
4	23/5/2011	Install and configure an SNMP agent
5	30/5/2011	SNMP: Comparison versions 1, 2 and 3
6	From: 23/5/2011 9:00 To: 1/6/2011 17:00	Run a management application
7	20/6/2011	Write an extension to a SNMP agent, plus a report

Answers to exercises must be entered in Blackboard before 02:00 on the day of the deadline

Exercises can be found at:

http://www.simpleweb.org/wiki/Exercises_in_Internet_Management

Grading of exercises

Exercise	Topic	Weight
1	Structure of Management Information (SMI)	10%
2	Management Information Bases (MIBs)	5%
3	Decode a SNMP packet	5%
4	Install and configure a SNMP agent	10%
5	SNMP: Comparison versions 1, 2 and 3	10%
6	Run a management application	20%
7	Write an extension to a SNMP agent, plus a report	40%