



Course Specification

Course Name: [Planning and Design of Information Network]

Course Code: [IT421]

I. Basic Course Information

Major or minor element of program: [Major]

Department offering the course: [Information Technology Department]

Academic level: [400]

Semester in which course is offered: [Second (spring) semester]

Course pre-requisite(s): [Computer Networks- 2 [IT322]]

Credit Hours: 3

Contact Hours Through:

Lecture	Tutorial*	Practical*	Total
2.5	0.0	1.5	4.0

* 1.5 hours for **either** Tutorial or Practical

Approval date of course specification: January 2015

II. Overall Aims of Course

This course provides an overview of the process and methods used to create an enterprise network plan. Students examine inputs, business drivers and deliverables of the planning process. The course emphasizes practical issues such as business requirements, IT architecture, cost justification, implementation, migration planning and vendor selection.

III. Program ILOs covered by course

Program Intended Learning Outcomes (By Code)			
Knowledge & Understanding	Intellectual Skills	Professional Skills	General Skills
[K6,K17,K21,K23]	[I14,I15,I16,I18]	[P12,P13,P18]	[G2,G6,G9]



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IV. Intended Learning Outcomes of Course (ILOs)

a. Knowledge and Understanding

[On completing the course, students should be able to:

- K.1 Describe the design methodologies of a small to medium network.
- K.2 Define the network components that are most appropriate for a problem.
- K.3 Define the network performance measurements.
- K.4 Describe the planning methodologies of a small to medium network.
- K.5 Define the quality of services of a small to medium network.]

b. Intellectual/Cognitive Skills

[On completing the course, students should be able to:

- I.1 Plan and design a small to medium network.
- I.2 Select network components that are most appropriate for a problem.
- I.3 Estimate and analyse network performance.
- I.4 Evaluate the quality of services of a small to medium network.]

c. Practical/Professional Skills

[On completing the course, students should be able to:

- P.1 Implement a small to medium network.
- P.2 Analyze traffic on a network.
- P.3 Configure the network components.]

d. General and Transferable Skills

[On completing the course, students should be able to:

- G.1 Work effectively as a team member.
- G.2 Demonstrate problem solving skills through designing and planning a network that matches a given quality of service.
- G.3 Demonstrate time management and presentation skills abilities.]

V. Course MatrixContents

	Main Topics / Chapters	Duration (Weeks)	Course ILOs Covered by Topic (By ILO Code)			
			K & U	I.S.	P.S.	G.S.
1-	Network Design Essentials]	2]	[K1,K3]	[I1,I2]	[P1,P2,P3]	[G1,G2,G3]
2-	Network Transmission and Technologies]	2]	[K1,K3]	[I1,I2]	[P1,P2]	[G1,G2,G3]
3-	Networking Hardware]	2]	[K1,K2,K3]	[I1,I2]	[P1,P2,P3]	[]
4-	Wide Area Networks]	2]	[K1,K2,K3]	[I1,I2]	[P1,P2,P3]	[]
5-	Planning: System Development Methodologies]	2]	[K4,K5]	[I3,I4]	[P1,P2]	[G1,G2,G3]
6-	Design Techniques:Network Design Tools and Algorithms]	3]	[K4,K5]	[I3,I4]	[P1,P2,P3]	[G1,G2,G3]
	Net Teaching Weeks	13				



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VI. Course Weekly Detailed Topics / hours / ILOs

Week No.	Sub-Topics	Total Hours	Contact Hours	
			Theoretical Hours	Practical Hours*
1	Network Design Essentials	2.5	2.5	
2	Network Design Essentials	4	2.5	1.5
3	Network Transmission and Technologies	4	2.5	1.5
4	Network Transmission and Technologies	4	2.5	1.5
5	Networking Hardware	4	2.5	1.5
6	Networking Hardware	4	2.5	1.5
7	Midterm Exam			
8	Wide Area Networks	4	2.5	1.5
9	Wide Area Networks	4	2.5	1.5
10	Planning: System Development Methodologies	4	2.5	1.5
11	Planning: System Development Methodologies	4	2.5	1.5
12	Design Techniques :Network Design Tools and Algorithms	4	2.5	1.5
13	Design Techniques :Network Design Tools and Algorithms	4	2.5	1.5
14	Design Techniques :Network Design Tools and Algorithms	4	2.5	1.5
15	Final Exam			
Total Teaching Hours		51	33	18

* No Practical/Tutorial during the first week of the semester

VII. Teaching and Learning Methods

Teaching/Learning Method	Selected Method	Course ILOs Covered by Method (By ILO Code)			
		K & U	Intellectual Skills	Professional Skills	General Skills
Lectures & Seminars	<input checked="" type="checkbox"/>	All	All		
Tutorials	<input type="checkbox"/>				
Computer lab Sessions	<input checked="" type="checkbox"/>			All	
Practical lab Work	<input checked="" type="checkbox"/>			All	
Reading Materials	<input checked="" type="checkbox"/>	All	All		
Web-site Searches	<input checked="" type="checkbox"/>	All	All		
Research & Reporting	<input type="checkbox"/>				
Problem Solving / Problem-based Learning	<input type="checkbox"/>				
Projects	<input type="checkbox"/>				
Independent Work	<input type="checkbox"/>				
Group Work	<input checked="" type="checkbox"/>			All	All
Case Studies	<input checked="" type="checkbox"/>			All	All
Presentations	<input checked="" type="checkbox"/>			All	
Simulation Analysis	<input type="checkbox"/>				
Others (Specify):	<input type="checkbox"/>				



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VIII. Assessment Methods, Schedule and Grade Distribution

Assessment Method	Selected Method	Course ILOs Covered by Method (By ILO Code)				Assessment Weight / Percentage	Week No.
		K & U	I.S.	P.S.	G.S.		
Midterm Exam	<input checked="" type="checkbox"/>	All	All			15%	7
Final Exam	<input checked="" type="checkbox"/>	All	All			60%	15
Quizzes	<input checked="" type="checkbox"/>	All	All			5%	8
Course Work	<input type="checkbox"/>						
Report Writing	<input type="checkbox"/>						
Case Study Analysis	<input checked="" type="checkbox"/>			All	All	5%	10
Oral Presentations	<input type="checkbox"/>						
Practical	<input checked="" type="checkbox"/>			All		10%	11
Group Project	<input checked="" type="checkbox"/>			All	All	5%	12
Individual Project	<input type="checkbox"/>						
Others (Specify):	<input type="checkbox"/>						

IX. List of References

Essential Text Books	<ul style="list-style-type: none"> Shaun Hummel, "Network Planning and Design Guide ", BookSurge Publishing (May 25, 2006)
Course notes	<ul style="list-style-type: none"> Powerpoint presentations for the course
Recommended books	<ul style="list-style-type: none"> Shaun Hummel , "Networking Technical Concepts: Foundation for Cisco Network Design"
Periodicals, Web sites, etc ...	<ul style="list-style-type: none"> Designed to support network service providers. The analysis and design tools emphasize integration of analytic and simulation techniques to provide accurate results in reasonable time for large, complex networks. WinMIND, Salestar Network Analysis Center, www.salestar.com, a mature design tool, primarily based on analytic models. NetRule, Analytical Engines, www.analyticalengines.com, a recently developed, Java based tool for WAN based networks. It appears to be elegant and relatively simple to use. It appears to use primarily analytic algorithms.

X. Facilities required for teaching and learning

<p>List the facilities required</p> <ul style="list-style-type: none"> Computer lab connected to Internet. Software: Microsoft Project Management, Microsoft Office

Course coordinator: [Prof.ImaneAlySaroit]

Head of Department:[Prof. Hesham El Mahdy]

Date: [January 2015]