Secured Enterprise Networks

- 1. Course number and name: 020RESES5 Secured Enterprise Networks
- 2. Credits and contact hours: 4 ECTS credits, 2x1:15 contact hours
- 3. Instructor's or course coordinator's name: Tony Feghali

4. Text book:

a. Other supplemental materials: Course handouts, technical documentation, best practices documentation

5. Specific course information

a. Catalog description:

Understanding security services used when designing a secure enterprise network. Packet and content filtering, Security zones, Intrusion prevention techniques, Public Key Infrastructures, Virtual Private Networks, Network Access control, Data Leak Prevention, Network Management, Security Events and Information Management, SOC tools, Design principles of a secure network. Case studies on designing an enhanced secure network design, dimensioning principles of security controls and appliances.

- **b. Prerequisites or co-requisites:** 020RCOES2 Network Routing and Switching
- **c. Required:** Elective for CCE students; required for CCE telecommunication networks option students

6. Specific goals for the course

a. Specific outcomes of instruction:

The student will be able to understand the security requirement for an enterprise network

The student will be able to identify the benefits of the usage of security protocols The student will be able to identify weakness in a network design

The student will be able to propose and design a secure solution for an enterprise network

The student will be able to dimension appliances and services to be implemented in a secure design

b. KPI addressed by the course:

KPI	b3	c1	c2	c3	e1	e2	e3	g1	g2	i1	k2	k3
Covered		Х	Х	Х	Х	Х	Х				Х	Х
Assessed	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х
Give Feedback												

Lectures	Topic
1	Security services + Example of secure messages exchange
3	Public Key Infrastructures + Lab
1	Packet and Content level filtering
1	FW-UTM-NGFW
1	Intrusion prevention - IPS – WAF - Honeypot
1	Security Zones concept and Design
1	VPN + Tunneling concepts
1	Comparison between different protocols (Layer 2 – IPsec – SSL VPN- SSTP)
1	PPTP/L2TP – IPsec + Lab
1	SSL + Lab
1	Identity Management
1	802.1x + NAC
1	Data Leak Prevention
2	Network Management
2	Centralized Logging – SEIM – SOC tools
1	Traffic flow matrix + Case study
1	Case study: studying an existent design + defining the Flow Matrix
1	Case study: Designing internal security Zones
1	Case study: Designing Internet Access protection
1	Case study: Designing a VPN solution
1	Case study: choosing the Appliances (based on datasheets)
1	Case study: NAC solution
2	SDN Security

7. Topics and approximate lecture hours: