EEE.7.2.5 Advanced Topics in Networking and Security

This course is on advanced topics in Networking and Security. Upon successful completion of the course the student will have specialized knowledge over Computer Networks and Interconnected Electronic Systems over the Internet. Based on that, the student will be able to:

Understand how routing protocols and related algorithms work, and to know and deploy various routing techniques over IP networks.

Know and distinguish the various network architectures, their characteristics as well as the way network devices and remote access protocols operate.

Have an in-depth knowledge of the interconnection technologies used in IP networks (VLAN, MPLS, PPoE, PPoA) as well as the characteristics of the physical media.

Design and implement IP based networks, taking into account the parameters that have an impact on the design of each topology and use scenario.

Understand the security issues that apply, on a case-by-case basis as well as to know the techniques used to enhance the security of systems in networked and cyberphysical systems.

Cooperate in a team to provide integrated solutions for the secure interconnection of networked electronic devices and systems.

To work in complex work environments with emphasis on data security and privacy.

Keywords: Computer networks, Routing Protocols, Interconnection Technologies, Network Design and Creation, Network and System Security.