Visiting professors programme
Master level courses available in 2022/2023

Course title no 1: **Systems Security Management & Risk Management**

Number of teaching hours and period: 20 hours lecture between October 2022 and December 2022 and/or in February/March 2023.

**Course objectives:** at the end of this course, the students will be able to:
- Learn the phases of security management according to the ISO quality standard 27032
- Learn the standards and reference systems related to cybersecurity
- Learn the security standards for risk management
- Use the EBIOS method within a given situation or company

**Short course content**
- Introduction to safety management and methods
- Introduction to security stands and benchmarks
- ISSP: Information System Security Policy
- Risk modelling
- Assessing risks
- Examples of threats

**Contact person at ESIGELEC:** Dr Vincent Derrien (vincent.derrien@esigelec.fr)

Course title no 2: **Cryptography**

Number of teaching hours and period: 20 hours lecture in February/March 2023.

**Course objectives:** at the end of this course, the students will be able to:
- Explain where problems in I.T. security or telecommunications systems come from
- Explain how cryptographic systems work and how they are used to provide security services
- Apply various security techniques incorporating cryptography for a local company network

**Short course content**
- The origin of network weaknesses which lead to hacker attacks
- The role and characteristics of communication protocols
- An example: Data Link Control (HDLC) Protocol
- The various types of encryption and their limits
- Identification methods in a network
- 3-layer network security: IPsec protocol and TLS (Transport Layer Security)
- Access control for services

**Contact person at ESIGELEC:** Dr Vincent Derrien (vincent.derrien@esigelec.fr)
**Course title no 3: MPLS and High-Speed Networks**

**Number of teaching hours and period:** 16 hours lecture + 4 hours class in November/December 2022 or in January 2023

**Course objectives:** at the end of this course, the students will be able to:
- Explain the evolution of digital transport networks
- Put together solutions for WAN architecture (to connect distant sites)
- Use MPLS (Multiprotocol Label Switching) to manage traffic

**Short course content**
- LAN (Local Area Network) topologies
- Service integrated digital networks
- Frame relay and synchronous digital hierarchy
- Asynchronous transfer techniques (ATM) and quality of service
- MPLS (Multiprotocol Label Switching) and BGP (Border Gateway Protocol)

**Contact person at ESIGELEC:** Dr Vincent Derrien (vincent.derrien@esigelec.fr)

**Course title no 4: Initiation to RF Noise measurement**

**Number of teaching hours and period:** 20 hours in October/November 2022.

**Course objectives:**
- initiate the students (graduate/postgraduate) on RF noise measurement techniques

**Short course content:**
- Generalities on noise (sources, types, etc.).
- Noise model and noise figure of a quadripole.
- Friis equation. Noise measurement techniques.
- Examples and practice.

**Contact person at ESIGELEC:** Dr Constant NIAMIEN (constant.niamien@esigelec.fr)