



# TECHNOPOLICIES OF TELECOMMUNICATIONS

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# **COURSE DESCRIPTION**

**The course introduces and analyzes the interplay between the main aspects in the telecommunication market :**

- **Technology**
- **Policy/regulations**
- **Economy**

**The course takes the student into a journey of a mix of both technology and policy aspects while considering telecom infrastructure (connectivity solutions, spectrum resource) as well as specific evolving systems/concepts including smart cities and IoT given a safe and secure environment**

# **COURSE OUTLINES**

**Introduction to policy and regulations**

**Spectrum management**

**Spectrum economics**

**International organizations and standards**

**From 1G to 5G: market evolution**

**Broadband and universal connectivity**

**IoT and Smart Cities**

**Cybersecurity**

# **COURSE LEARNING OUTCOMES**

- **Understanding of the fundamental telecom theory and its reflection in real systems**
- **Knowledge of basic economics of telecommunications and its impact on the technical solution (joint optimization of technical and economic aspects)**
- **Understanding the policy/regulation parameters and its impact on the technical solution in Egypt and overall the world and its societies.**
- **Knowledge of standards and standardization process**
- **Knowledge of evolving trends nationally and worldwide**

# COURSE LEARNING OUTCOMES (CONT.)

- **Knowledge of cybersecurity fundamentals for securing communications:**

- **Cryptography:**

- Symmetric encryption and message confidentiality
- Public key cryptography and message authentication

- **Transport Level security: web security, TLS/SSL, HTTPS, SSH**

- **IP Security**

- **Intrusion Detection System (IDS)**

- **Firewalls/IPS**

- **Malicious software**

- **Electronic mail security**

## **SKILLS DEVELOPED**

- **Introduction and analysis of real use cases and implementations**
- **Knowing the main concepts and controlling elements in the market**
- **Developing the notion of holistic system view**
- **Developing smart intuitions for better understanding and making quick decisions**