**Summary**

This course provides a detailed description of the organization and operating principles of mobile communication networks.

**Content**

- Introduction to wireless networks
- Organization of the MAC layer
- Wireless Local Area Networks - WiFi
- Cellular networks
- Mobility at the network and transport layers
- Security and privacy in mobile networks

**Keywords**

Communication networks, protocols, mobility

**Learning Prerequisites**

- **Required courses**
  - Computer Networks

- **Recommended courses**
  - Principles of Digital Communications
  - Network security

**Important concepts to start the course**

Operating principles of communication protocols and layer organization.

**Learning Outcomes**

By the end of the course, the student must be able to:

- Synthesize the way a mobile network operates
- Interpret the behavior of such networks
- Propose evolutions to existing protocols
- Identify weaknesses, bottlenecks and vulnerabilities

**Teaching methods**
Ex cathedra lectures
Weekly quizzes
Exercise sessions
Hands-on exercises

**Expected student activities**
Class participation, quizzes, homework, hands-on exercises

**Assessment methods**
Quizzes + final exam

** Supervision**
- Office hours: No
- Assistants: Yes
- Forum: No
- Others: The lecturer will be present at most of the exercise sessions.

**Resources**

**Bibliography**
Handouts, recommended books (see course URL)

**Ressources en bibliothèque**
- Fundamentals of Mobile Data Networks / Miao

**Websites**
- [http://mobnet.epfl.ch/](http://mobnet.epfl.ch/)

2018-2019 COURSE BOOKLET
Mobile networks