

5G and beyond

ECTS
3 crédits

Composante
Sciences Fondamentales et Appliquées

En bref

- # Langue(s) d'enseignement: Anglais
- # Ouvert aux étudiants en échange: Non

Présentation

Objectifs

The aim of this module is to study 5G technologies and Network architecture in order to optimize the following items to guarantee the Quality of Services/Experience:

- Peak data rate (Gbit/s);
- User experienced data rate (Mbit/s);
- Spectrum efficiency (bit/Hz);
- Device mobility (km/h);
- Latency (ms);
- Connection density (number of connected/accessible objects per km²);
- Network's energy efficiency;
- Area traffic capacity (Mbit/s/m²).

Heures d'enseignement

TD	TD	30h
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Pré-requis obligatoires

Digital communication

Programme détaillé

5G technologies: (Wireless channel concept) “millimetre” wave frequencies, Massive MIMO, Full Duplex transmission, NOMA Multiplexing (Non Orthogonal Multiple Access), New high spectral efficiency modulation concepts

5G Network architecture skills: Software-defined networking (SDN) and network functions virtualisation (NFV)