

**Course Title:** Mobile Telecommunication Technology  
**Course code:** EMoS 6222  
**Total Credit:** 9  
**Total Hours:** 90  
**Course Status:** Speciality core

**Course Aim:** Upon successful completion of this subject students should be able to:

- Explain the limitations of fixed networks; the need and the trend toward mobility; the concepts portability and mobility.
- Describe and analyze the network infrastructure requirements to support mobile devices and users.
- Illustrate the concepts, techniques, protocols and architecture employed in mobile communication networks and performs basic requirements analysis.

**Expected Learning Outcomes:** By the end of the course, the students will be able to:

- Explain the basic modules in mobile communication systems
- Learn wireless networking concepts such as channel modelling, modulation schemes, and multiple access methods
- Describe the evolution of wireless and cellular communication systems
- Simulate an end to end digital communication system
- Understand security aspects in wireless communication systems
- Master the policy issues governing spectrum allocation

### **Course Contents:**

This covers the development of the wireless network technology from mobile networks (GSM, GPRS, UMTS, LTE) to IP wireless networks. The emphasis is on the concepts, infrastructure, and protocols for supporting device and user mobility.

**Teaching Methodology:** lectures, practical - case study, simulations, group work, projects and tutorials.

**Assessment Methods:** Assignments, group work and presentations, final exam.

### **Recommended Readings**

1. Beard, C, and Stallings W., *Wireless Communication Networks and Systems*, Global Edition, Pearson, 2016
2. Schiller, J., *Mobile Communications*, 2nd Edition, Addison Wesley, 2003.
3. Ienewa, J. and Ciampa, M., *Guide to Wireless Communications*, Course Technology, 3rd Edition, 2013

4. Kurose J. F. and Ross, K. W., *Computer Networking: A Top Down Approach*, 5th Edition, Pearson, 2010