

**Mobile Communications**  
 scheduling of lectures and practical lessons

<i>Title of course::</i>	<b>Mobile Communications</b>		
<i>Short title of course:</i>	MobCom.	<i>Code:</i>	<b>GEVAU221M-a</b>
<i>Institute:</i>	Institute of Automation and Infocommunication		
<i>Course coordinator:</i>	Dr. Attila Károly Varga associate professor (e-mail: <a href="mailto:varga.attila@uni-miskolc.hu">varga.attila@uni-miskolc.hu</a> )		
<i>Pre-requisite::</i>	nincs		
<i>Credits:</i>	5	<i>Requirements:</i> <i>midterm (1)</i>	exam
<i>Hours</i>	<i>Lectures: 2</i>	<i>Practical lessons: 2</i>	
<i>Goal:</i>	Acquire adequate knowledge of mobile communication systems		
<i>Topics::</i>	Mobile Communications Systems, Transmission lines and antennas, Radio Wave Propagation, cellular communications, FDMA, TDMA, CDMA, Modulation, channel coding procedures, GSM system, GPRS and EDGE systems, 3G,4G, 5G, WLAN, Bluetooth, UWB, 802.11		
<i>Recommended literature:</i>	<ol style="list-style-type: none"> <li>1. Gordon L. Stüber: Principles of Mobile Communication 4th ed. 2017 Edition, ISBN 978-3319556147, 2017</li> <li>2. Koushik Sinha, Sasthi C. Ghosh, Bhabani P. Sinha: Wireless Networks and Mobile Computing, ISBN 9781482227932, 2015</li> <li>3. Jochen Schiller: Mobile Communications, ISBN 978-8131724262, 2008</li> <li>4. Sanjay Sharma: Mobile and Wireless Communication, ISBN 9789350142219, 2014</li> </ol>		
<i>Language:</i>	English		
<i>Lectures:</i>	blackboard,computer, projector		
<i>Practical lessons:</i>	computer, projector		
<i>Assessment:</i>	midterm, exam		
<i>Schedule for lectures and practical lessons</i>			
week 1	An overview of the development of mobile communications systems.		
week 2	Transmission lines and antennas		
week 3	Essentials of Radio Wave Propagation		
week 4	Fundamentals of cellular communications		
week 5	The concept of multiple accesses (FDMA, TDMA, CDMA)		
week 6	Modulation and channel coding procedures		
week 7	GSM system (architecture,radio interface, localization and calling, handover)		
week 8	GSM system (ciphering, frame analysis)		
week 9	GPRS and EDGE systems		
week 10	3G cellular systems (UMTS/IMT-2000)		
week 11	Overview of 4G systems		

week 12	Midterm
week 13	Overview of 5-G systems
week 14	WLAN, Bluetooth, UWB, 802.11 Basics

Miskolc September 9, 2019

Dr. Attila Trohák  
director of institute, associate professor

Dr. Attila Károly Varga  
associate professor, course coordinator