Course: ENPM 808B – Evolution of Mobile Communications Systems and Standards  
Semester: Fall 2015  
Day(s): Mondays  
Time: 4-6:40pm  
Location: TBD  
Instructor: Dr. Kamran Etemad  
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Course Description

This course provides an in depth understanding of key concepts, technologies and design principles applied in the development of 3G/4G wireless systems and standards. Topics related to radio and physical channelization, CDMA and OFDMA based physical layer procedures, media/link access MAC/LAC layer and radio resource control (RRC) as well as some network architecture, signaling protocols and deployment tradeoffs are addressed. The course maps the presented concepts to their specific realizations in standards and protocols and their evolution from 3G to 4G technologies and beyond covering cdma2000 1x RTT, WCDMA, EV-DO, HSPA as well as LTE.  

Exams: Two Exams, each %50 of total grade.

Required/Recommended Textbooks

Recommended Text:  
Required: Slides/Class Notes will be provided.

Course Outline

- Week 1: Overview of 3G/4G Standardization Process  
- Week 2&3: CDMA based Concepts and Technologies in 2G/3G Cellular Systems  
- Week 4&5: OFDMA, MIMO and Other Core Technologies in 3G+/4G Systems  
- Week 6: Overview of IS2000/CDMA2000 1xRTT  
- Week 7: Overview UMTS/WCDMA  
- Week 8: Exam 1  
- Week 9: Overview of EV-DO (Rev. 0/A/B)  
- Week 10: Overview of HSPA and HSPA+  
- Week 11&12: Overview of LTE Network and Air Interface  
- Week 13: Course Review/ (Optional) Overview of LTE Advanced and/or Mobile WiMAX  
- Week 14: Exam 2
The University of Maryland, College Park has a nationally recognized Code of Academic Integrity, administered by the Student Honor Council. This Code sets standards for academic integrity at Maryland for all undergraduate and graduate students. As a student you are responsible for upholding these standards for this course. It is very important for you to be aware of the consequences of cheating, fabrication, facilitation, and plagiarism. For more information on the Code of Academic Integrity of the Student Honor Council, please visit http://shc.umd.edu/SHC/HonorPledgeInformation.aspx.