

## COURSE PROFILE

<b>Course Number : EE 474</b>	<b>Course Title : Communication Simulation Techniques and Lab.</b>
<b>Required / Elective : Elective</b>	<b>Pre-requisite : EE470 (corequisite)</b>
<b>Course Description:</b> Analog communication systems. Amplitude modulation (AM), double sideband modulation (DSB), single sideband modulation (SSB), frequency / phase modulation (FM/PM). Digital communication systems: amplitude shift keying (ASK), phase shift keying (PSK), frequency shift keying (FSK). Simulation of digital and analog communication systems (transmitter-receiver-channel) using MATLAB.	<b>Textbook / Required Material :</b> Lab handouts.
<b>Course Structure / Schedule :</b> (2+0+2) 3 / 6 ECTS	
<b>Extended Description :</b> See above	
<b>Design content :</b> Rudimentary communication system design using Matlab.	<b>Computer usage:</b> Mandatory computer assignments to review and develop some of the concepts taught in class. Term project.
<p><b>Course Outcomes:</b></p> <p>On successful completion of this course, students should be able to:</p> <ol style="list-style-type: none"> <li>1.)Recognize and assess the practical aspects of communication systems. [6],[7]</li> <li>2.) Recall the defining aspects of the digital and analog communication systems currently in use.[10],[3]</li> <li>3.)Conduct experiments; analyze and interpret data on practical digital and analog communication systems. [5]</li> <li>4.)Recognize the role of physical and economical constraints in designing a communication system that meets given requirements. [7], [11]</li> <li>5.)Work as part of a team. [8]</li> <li>6.) Use software based modeling and simulation tools necessary for designing and analyzing communication systems. [11], [6], [7]</li> </ol> <p>Strong: [5],[6],[8],[11] Average:[7], Some:[10],[3]</p>	

<b>Recommended reading:</b> <i>Communication Systems</i> , by S. Haykin, John Wiley and Sons Inc.	
<b>Teaching Methods:</b> Pre-readings, lecture, computer assignments, term project, hands-on experiments.	
<b>Assessment Methods:</b> Exams,homeworks, computer assignments, term project, lab reports, class surveys.	
<b>Student Workload:</b>	
Preparatory reading	46 hrs
Lectures	28 hrs
Experiments	28 hrs
Homeworks	25hrs
Term Project	20 hrs
Final Exam	3 hrs
<b>TOTAL .....</b>	<b>150 hrs ... to match 25 x 6 ECTS</b>
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