

Date:	Examination No.: 15367	Version: 1	Start: 4/9/2023
Module Name - Code	GNSS - 7137		
Module Language:	English		
Responsible:	Assistant Lecturer Rojgar Q. Ismael		
Lecture (s):	Assistant Lecturer Rojgar Q. Ismael		
College:	College of Engineering – Salahaddin University-Erbil		
Duration:	15 week – 7 semester		
Course outcomes:	At the end of the semester, students would be able to understand the principles of GNSS as part of their professional studies. Also providing a deep knowledge about GPS, GLONASS, Galileo, Compass, and NAVIC constellations. Moreover, the students will learn the most useful measurements techniques: static, RTK, and PPK.		
Course Content:	<ol style="list-style-type: none"> 1 Introduction to GPS and GNSS 2 GNSS systems and architectures 3 GPS computations, Biases and Errors 4 Measurements methods (Pseudorange and carrier phase) 5 Observation techniques (static, RTK, PPK) 		
Literature:	<ol style="list-style-type: none"> 1 <i>GNSS: Global Navigation Satellite Systems, Hofmann-Wellenhop, Lichtenegger, Wasle, Springer, 2008.</i> 2 <i>GNSS Applications and Methods, Scott Gleason, Demoz Gebre-egiabher, Artech House, 2009.</i> 3 <i>Understanding GPS/GNSS: principles and applications, Elliott D. Kaplan, Christopher J. Hegarty, 3rd ed. Artech House, 2017.</i> 4 <i>Introduction to GPS: The Global Positioning System, Ahmed El-Rabbany, Second Edition, Artech House, 2002</i> 		
Type of Teaching:	2 hrs. in Theoretical lectures 3 hrs. Practical lectures		
Pre-requisites:			
Frequency:	Yearly in fall semester		
Requirements for credit points:	For the award of credit points it is necessary to pass the module exam. The module exam (practical and theoretical) contains: [Written 120 min for theoretical] [Written 30 min for practical] Student's attendance is required in all classes.		
Credit point:	5		
Grade Distribution:	The Grade is generated from the examination result(s) with the following 5% activity 15% practical 30% mid-term exam 20% final practical exam 30% final theoretical Exam		
Work load:	The workload is 135h. It is the result of 65h attendance and 70h self studies.		