



Course Description

College/Institute: Maritime Postgraduate Studies Institute

Program: M.Sc in Hydrographic Surveying

1- Course Data		
Course Code: MPI 716	Surveying Instrument	Academic Year:2015-2016
Specialization:	Hydrographic Surveying	

2- Course Aim	This course aims at enabling students to evaluate the capabilities of surveying equipment for different applications. However, this course aims at enabling students to Master fundamentals and methods of research in order to produce their thesis in accordance to the academic final degree research requirements.
3- Intended Learning Outcome:	
a- Knowledge and Understanding, students will be able to:	<ol style="list-style-type: none"> 1. Evaluate the capabilities of surveying equipment for different applications. Demonstrate the use of basic surveying tools. 2. Apply geometric and trigonometric principles to basic surveying calculations. 3. Prepare accurate, legible and complete notes in a well-prepared field book. 4. Demonstrate field procedures in basic types of surveys. 5. Demonstrate awareness of the limitations of the basic surveying instruments and the possible errors that could arise. 6. Apply drawing techniques in the development of a topographic map.
b- Intellectual Skills, students will be able to:	Identify and critically analyze issues involved in Surveying Instrument and other branches and uses of Surveying Instrument
c- Professional Skills, students will be able to:	<ol style="list-style-type: none"> 1. field magnetic compass, measuring angles. 2. Gyro compass, gyroscope, application. 3. Sextant theory errors, use. 4. Theodolite, theory, adjustment, Total station, structure, use and application. 5. Infrared application, beam transmission. 6. Planimeter theory, use, application
d- General Skills, students will be able to:	<ol style="list-style-type: none"> 1. Trifix, range 2. Range measurement .



4- Course Content	<p>Week (1) Introduction to surveying and field notes.</p> <p>Theory of measurements and errors o Distance measurements with tapes and EDMI Field</p> <p>Week (2). Magnetic compass, measuring angles. Gyro compass, gyroscope, application</p> <p>Week (3) Application of the use of field companies.</p> <p>Week(4) Leveling procedures and computations. Angular Measurements: Bearings and Azimuths. Traverse computations</p> <p>Week (5) Theodolite, theory, adjustment,</p> <p>Week (6) Use of theodolite in measuring angles.</p> <p>Week (7) Evaluation (1) practical examination.</p> <p>Week (8) Total station, structure, use and application.</p> <p>Week (9) The use of total station.</p> <p>Week (10) Infrared application, beam transmission.</p> <p>Week (11) The use of reflectors in measuring.</p> <p>Week (12) Evaluation in practical exam.</p> <p>Week (13) Planimeter theory, use, application.</p> <p>Week (14) Practical measurements of areas user's ploniometer.</p> <p>Week (15) Trifix, range measurement.</p> <p>Week (16) Final exam.</p>
5- Teaching and Learning Methods	<p>A mixture of lectures, tutorials, exercises, and case studies are used to deliver the various topics in this subject, some of which are covered in a problem-based format, thereby enhancing the learning objectives by using Office hours and Additional Follow up.</p>
6- Teaching and Learning Methods for Students with Special Needs	
7- Student Assessment:	<ol style="list-style-type: none"> 1.Participation 2.Assignments 3.Presentations 4.Case Study 5.Quiz 6.Written Exams 7.Workshop
a- Procedures used:	
b- Schedule:	<p>Assessment(1) Mid Assessment(2) 12th Assessment(3) 15th.</p>



c- Weighing of Assessment:	7 th Week Examination , 12 th Week Examination , Final-term Report Writing , Oral seminar exam , Practical Examination , Semester Work , Total 100%
8- List of References:	Ježko J. (2014). Calibration of surveying instruments and tools – means to the quality increase of deformation measurements. Journal of Sustainable Mining, 13(4), 17–22. doi: 10.7424/jsm140404
a- Course Notes	
b- Required Books (Textbooks)	
c- Recommended Books	J. Clendinning & J.G. Olliver (1969). Principles & Use of Surveying Instruments. Blakie & son limited 5, Fitzhardinge, st. LONDON. https://archive.org/details/PrinciplesUseOfSurveyingInstruments
d- Periodicals, Web Sites, ..., etc.	

Vice Dean for Educational Affairs
Affairs Name & Signature:
Date:

College/Institute Dean
Name & Signature:
Date: