



**UNIVERSITI KUALA LUMPUR**  
MALAYSIAN SPANISH INSTITUTE

(The contents and other related details in this form is used for publication purpose only. Training module will be given to participants upon registration)

<b>Course Title:</b> <b>ANGULAR MEASUREMENT BY DIRECT &amp; INDIRECT MEASUREMENT</b>		<b>Course Code :</b>	<b>MET 102</b>
<b>Course Background/Summary:</b> <p>In manufacturing industry today, the instruments for angular measurement are equivalent to those for linear measurement and range from simple scaled instrument to highly sophisticated types for direct measurement. However, there is also a group of instruments for indirect measurement of angles. Therefore, this course will focus on the mechanisms of the most familiar angular measuring instruments for direct measurement, namely Bevel Protractor and as well as on the principles of trigonometry which is based on the Sine Bar for the indirect measurement of angles.</p>			
<b>Course Objectives:</b> <ul style="list-style-type: none"><li>• Describe the inherent differences between direct and indirect method for angular measurement.</li><li>• Measure angles through the use of the Universal Bevel Protractor and Sine Bar.</li></ul>			
<b>Target Audience:</b> <ul style="list-style-type: none"><li>• Technicians, Supervisors, Quality Practitioners, Quality Inspectors, Metrologists, Technologists, Engineers, Instructors, Trainers and Lecturers</li></ul>			
<b>Course Duration :</b>		<b>Min : 3 days, Max : 5 days</b>	
<b>Course Contents :</b>			
<b>No</b>	<b>TOPICS</b>		
1	Definition and Applications of Metrology		
2	The Importance of Metrology in Manufacturing Industry		
3	Standard System of Measurement		
4	Classification of Measurement Methods and Measuring Instruments		
5	Measurement of Angles		

UniKL MSI can also customize existing short courses and develop new courses to meet your personal training needs and requirements. The course duration serves as a guideline for your reference.

Please forward enquiries to Centre for Advancement & Continuing Education (ACE), University Kuala Lumpur (Malaysian Spanish Institute), Kulim Hi-Tech Park, 09000 Kulim, Kedah or via fax to:04-4032539 or email to [syazrah@unikl.edu.my](mailto:syazrah@unikl.edu.my) or call 04-4035199 / 200 (ext:112 / 185)



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6	Mechanisms and Principles of Bevel Protractor
7	Rules for Reading of Bevel Protractor
8	Principles of Trigonometry for Angular Measurement
9	Sine Bar Methodology
<b>No</b>	<b>TOPICS</b> (Lab Works/ Practical Exercises)
1	Exercise 1: The Concept of Metrology
2	Exercise 2: Measurement Units and Standard System
3	Lab Work 1: Bevel Protractor Reading
4	Lab Work 2: Angular Measurement through Universal Bevel Protractor
5	Lab Work 3: Angular Measurement through Sine Bar Method
<b>COURSE STRUCTURE:</b>	
Practical :	50%
Theory :	50%

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