



# SBEU1013 FUNDAMENTAL OF SURVEY AND MAPPING

## *Lecture 1: Briefing on Course Outline*

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# COURSE LECTURER(S)

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# Course Information

<b>School/Faculty:</b>	<b>Faculty of Built Environment and Surveying</b>		
<b>Program name:</b>	<b>Bachelor of Geomatics Engineering with Honours</b>		
<b>Course code:</b>	<b>SBEU1013</b>	<b>Academic Session/Semester:</b>	<b>2023-2024/1</b>
<b>Course name:</b>	<b>Fundamental of Surveying and Mapping</b>	<b>Pre/co requisite (course name and code, if applicable):</b>	<b>Null</b>
<b>Credit hours:</b>	<b>3</b>		

# Course Synopsis

**This course introduces students to fundamental aspects of surveying and mapping. The basic surveying and mapping techniques as well equipment are introduced and students will get the opportunity to use this equipment.**

# **COURSE LEARNING OUTCOME (CLO)**

At the end of this course, all of you will be able to:

1. Explain knowledge of science and technology in the field of Geomatics Engineering.
2. Perform basic surveying equipments and surveying works
3. Organise Geomatic Engineering tasks using available resources.
4. Work in a team and liaise at all levels.

# Course Content

Week	Topic	Remarks
8 Oct 2023 (Week 1)	Briefing on Course Outline	
17 Oct 2023 (Week 2)	Introduction <ul style="list-style-type: none"><li>• Definition and disciplines of survey and mapping</li><li>• Surveying Organisation in Malaysia and International</li></ul>	
22 Oct 2023 (Week 3)	Basic Procedure in Surveying <ul style="list-style-type: none"><li>• Principle of Surveying: control accuracy, consistency economy, independent check, maintenance and security.</li><li>• The Implementation of Surveying: Planning and reconnaissance; marking of station; data acquisition; data processing and adjustment; data presentation.</li><li>• Introduction to theory of errors in measurements</li></ul>	
29 Oct 2023 (Week 4)	Introduction to reference systems and mapping <ul style="list-style-type: none"><li>• Coordinate systems: Rectangular and Polar</li><li>• Reference system used in Malaysia</li><li>• Map, Plan and Scale</li></ul>	

Week	Topic	Remarks
5 Nov 2023 (Week 5)	Distance Measurement <ul style="list-style-type: none"> <li>Distance Measurement Techniques: Mechanical, Optical, and Electronic</li> <li>Distance measurement using mechanical technique (surveyor's chain, steel band, tape). Units in distance measurement.</li> </ul>	
12 Nov 2023 (Week 6)	Orientation and Angle Measurement <ul style="list-style-type: none"> <li>The concept of bearings: magnetic, true and grid</li> <li>Bearing and angle measurements. Units</li> <li>The use of survey compass for bearing measurement</li> </ul>	
19 Nov 2023 (Week 7)	Orientation and Angle Measurement (cont.) <ul style="list-style-type: none"> <li>The concept of bearings: magnetic, true and grid</li> <li>Bearing and angle measurements. Units</li> <li>The use of survey compass for bearing measurement</li> </ul>	
<b>26 Nov 2023 (Week 8)</b>	<b>Mid-Semester Break</b>	<b>Happy Holiday!</b>



Week	Topic	Remarks
3 Dec 2023 (Week 9)	Introduction to theodolite/total station <ul style="list-style-type: none"> <li>• Basic components of a theodolite</li> <li>• Angle measurement using theodolite: procedure, permanent and temporary adjustments, precaution and limitation.</li> </ul>	
10 Dec 2023 (Week 10)	Introduction to theodolite/total station (cont.) <ul style="list-style-type: none"> <li>• Basic components of a theodolite</li> <li>• Angle measurement using theodolite: procedure, permanent and temporary adjustments, precaution and limitation.</li> </ul>	
17 Dec 2023 (Week 11)	Theodolite/total station measurement <ul style="list-style-type: none"> <li>• Angle measurement using theodolite: field and office procedures, advantages, precaution and limitation</li> </ul>	
24 Dec 2023 (Week 12*)	Theodolite/total station measurement (cont.) <ul style="list-style-type: none"> <li>• Angle measurement using theodolite: field and office procedures, advantages, precaution and limitation</li> </ul>	

Week	Topic	Remarks
31 Dec 2023 (Week 13)	Height measurement <ul style="list-style-type: none"> <li>• The concept of levelling</li> <li>• National levelling network and levelling datum</li> <li>• Equipments used, field operation and booking systems</li> <li>• Data processing and adjustment</li> <li>• Contouring</li> </ul>	
7 Jan 2024 (Week 14)	Height measurement (cont.) <ul style="list-style-type: none"> <li>• The concept of levelling</li> <li>• National levelling network and levelling datum</li> <li>• Equipments used, field operation and booking systems</li> <li>• Data processing and adjustment</li> <li>• Contouring</li> </ul>	
14 Jan 2024 (Week 15)	Height measurement (cont.) <ul style="list-style-type: none"> <li>• The concept of levelling</li> <li>• National levelling network and levelling datum</li> <li>• Equipments used, field operation and booking systems</li> <li>• Data processing and adjustment</li> <li>• Contouring</li> </ul>	
<b>21 Jan 2024 (Week 16)</b>	<b>Revision Week</b>	
<b>(Week 17 -19)</b>	<b>Final Examination</b>	<b>Good Luck!</b>
<b>21 Feb 2024 (4 Weeks)</b>	<b>Mid-Semester Break</b>	

# Course Assessment

LIST OF ASSESSMENTS		Marks (%)
1	Test 1	7.5
2	Test 2	7.5
3	Quiz 1	2.5
4	Quiz 2	2.5
5	Project 1 & Project 2	30
6	Assignment 1 & 2	20
7	Final Examination	30
	<b>TOTAL MARKS</b>	<b>100</b>

# References

## **Text book** (*if applicable*)

~ None ~

## **Main references:**

1. Kavanagh B. and Mastin.: Surveying Principles and Applications 9th edition
2. J.M. Anderson and E.M. Mikhail: Surveying and Practice, Publication: MH; 7th edition (2013)
3. Ramsay and Wilson: Land Surveying
4. Oliver and Clendenning: Principle of Surveying Vol. 1 and 2
5. Bannister and Raymond: Surveying
6. J.M. Anderson and E.M. Mikhail: Introduction to Surveying
7. F.A. Shepherd: Ukur Kejuruteraan Lanjutan (Terjemahan Mohd. Zulkefli Mohd Yunus & Zukarnaini Mat Amin, terbitan UTM)
8. Ramsey J.P. Wilson: Ukur Tanah (Terjemahan: Sakdiah Basiron)
9. J. Uren and W.F. Price: Ilmu Ukur Untuk Jurutera (Terjemahan: Kamaruzaman Abd. Rashid, Anuar Ahmad & Shahidah Mohd Ariff)
10. Dhanpat Rai & Sons: Elementary Surveying
11. R. Agor: Surveying and Levelling

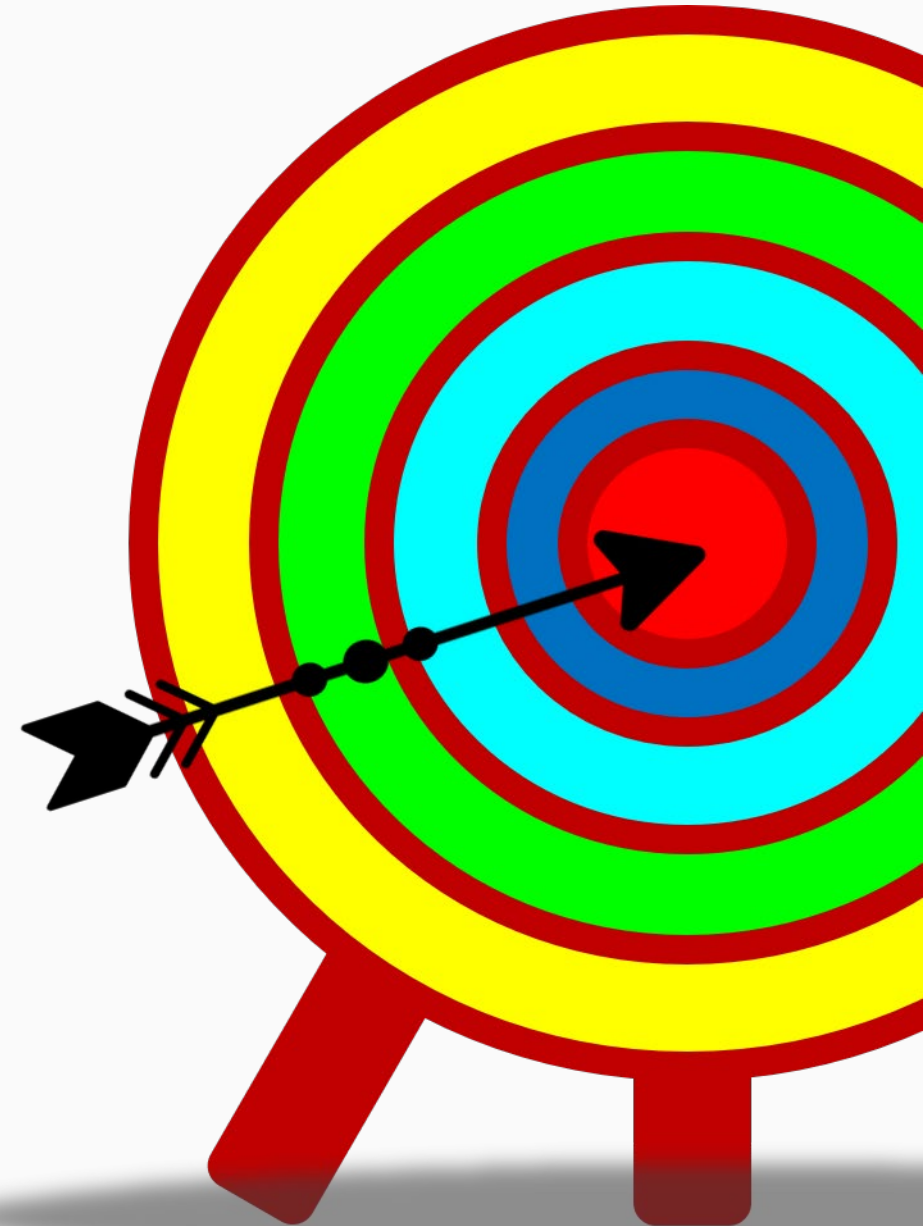
**ANY QUESTION...???**

A collage of surveying equipment and a drone over a topographic map. The background is a light blue and green topographic map with contour lines. In the foreground, there is a yellow and black surveying instrument on the left, a white drone in the center, and a person in black clothing using a tripod-mounted instrument on the right. A boat is visible in the lower center.

# **WE ARE SURVEYOR'S**



***Set you target from now.....***



Time  
to think about  
SUCCESS





**THANK YOU**



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