

## Ilmu Ukur Wilayah

<b>Course Brief Description:</b>	Student will be able to measure, calculate, and correct the distances (horizontal profile), and angle (polygon). They also have skill to draw contour and calculate cut and fill as well as the digital mapping in GIS and remote sensing. This course contains (1) basic concepts of surveying, (2) Measurement, Calculation, and Corrections in Distance and Angle, (3) Mensuration in Polygon (Area, Volume, and Cut & Fill) (4) Digital Mapping System (SIG and remote Sensing).
<b>Course Learning Objectives:</b>	<p>[1] Student will be able to measure, calculate, and correct the distances (horizontal profile), and angle (polygon).</p> <p>[2] Students have skill to draw contour and calculate cut and fill</p> <p>[3] Students will have skill related to digital mapping in GIS and remote sensing</p>
<b>Related Expected Learning Outcomes (ELOs):</b>	<ul style="list-style-type: none"> <li>• ELO-5: Use techniques, skills, and modern tools necessary for agricultural engineering practices.</li> <li>• ELO-6: Manage and utilize agricultural resources effectively, efficiently, and sustainable</li> </ul>
<b>Teaching Method</b>	<ul style="list-style-type: none"> <li>• Lecture and in-depth discussion</li> <li>• Tutorial</li> <li>• Independent assignment</li> <li>• Practices</li> </ul>
<b>Grading Policy</b>	<ul style="list-style-type: none"> <li>• Quiz and Assignment : 20%</li> <li>• Exam : 50%</li> <li>• Practice in Laboratory : 30%</li> </ul>
<b>Reference</b>	Schofield, W. & M. Breach, 2007. Engineering Surveying. Sixth Edition, Butterworth-Heinemann Elsevier. Sydney.
<b>Lecturer Name</b>	<ul style="list-style-type: none"> <li>• Prof. Dr. Ir. Ahmad Munir, M.Eng</li> <li>• Dr. Ir. Mahmud Achmad, MP</li> <li>• Dr. Ir. Daniel Useng, M.Eng.Sc</li> <li>• Samsuar, STP., M.Si</li> </ul>

### Course Outline

Lecture	Topic:	
1	Introduction: Concepts	
2	Measurement Tools in Surveying	
3	Distances Measurement (Direct and Optics)	Assignment 1
4	Distance and Elevations	Quiz 1
5	Vertical Control and Angle Measurement	

Lecture	Topic:	
6	Polygon: Measurement	Assignment 2
7	Polygon: Computation	Quiz 2
8	<b>Mid Test</b>	
9	Area and Volume	Assignment 3
10	Gridding and Topographic Maps (Contour)	
11	GIS: Introduction, data and Software	Quiz 3
12	Map projection systems	
13	Remote Sensing	
14	Land Use Classification (Citra Digital)	Quiz 4
15	Application of GIS and Remote Sensing	Assignment 4
16	<b>Final Exam</b>	