

<b>Course Code</b>	GP 112
<b>Course Title</b>	Engineering Measurements
<b>No. of Credits</b>	3
<b>Pre-requisites</b>	-
<b>Compulsory/Optional</b>	Compulsory
<b>Aim(s):</b> The objective of the course is to enable students to understand different aspects of instrumentation and to learn procedures to solve engineering problems through measurement and experimentation.	
<b>Intended Learning Outcomes:</b> On successful completion of the course, the students should be able to;	
LO1 <b>Measure</b> basic engineering quantities and <b>present</b> the results in correct units and significant figures using charts and tables	
ILO2 <b>Identify</b> different types of errors in measurements, considering the basic components and performance indicators of measuring instruments, and <b>apply</b> procedures to minimize the impact of errors in measurements.	
ILO3 <b>Analyze</b> time dependent output of an instrument through rigorous or numerical methods to obtain errors and input characteristics.	
ILO4 <b>Apply</b> dimensional analysis and analogies to solve engineering problems through experimentation and <b>Construct</b> experiments to test hypothesis using statistical techniques where required	
<b>Time Allocation (Hours):</b> Lectures: 21 Tutorials: 4 Practical: 40 Assignments:	
<b>Course content/Course description:</b>	
<ul style="list-style-type: none"> <li>• Introduction to engineering measurements</li> <li>• Measurement of engineering parameters</li> <li>• Units and standards</li> <li>• Presentation of engineering information</li> <li>• Errors in measurements and error propagation</li> <li>• Sensors and Transducers</li> <li>• Design of Experiments</li> <li>• Dimensional Analysis</li> </ul>	
<b>Recommended Tests:</b>	
<ul style="list-style-type: none"> <li>• Schofield, W., and Breach, M. "Engineering Surveying",</li> <li>• Ghilani, Charles D., and Wolfe, Paul R. "Elementary Surveying: An Introduction to Geomatics ",</li> <li>• Lipták, Béla G., (editor-in-chief), "Instrument Engineers Handbook (4th edition)"; Process measurement and analysis, Volume 1, CRC press, 1999.</li> <li>• Beckwith, Thomas G., "Mechanical Measurement (4th Edition)", Addison -Wesley Publishing company.</li> <li>• Douglas, J. F., Gasiorek, J., Swaffield, J., and Jack L. "Fluid mechanics", 6th edition, Pearson/Prentice Hall, 2011.</li> </ul>	
<b>Assessment</b>	<b>Percentage Mark</b>
<b>In-course</b>	
Tutorials/Assignments/Quizzes	20
Projects/Coursework (Activity)	40
<b>End-semester</b>	40