

Department of Mechatronics Engineering			
Transducers & Interfacing Lab. (67482)			
Total Credits	1		
major compulsory			
Prerequisites	P1 : Engineering Measurements (67315) OR Electrical Measurements & Sensors (63315) OR Transducers & Interfacing (67481)		
Course Contents			
Experiments on transducers and their construction. Experimental identification of static characteristics of sensing elements: Ideal straight line, non-linearity, sensitivity, hysteresis, resolution, and error bands. Experiments on loading effects in measurement systems. Experiments on deflection bridges and amplifiers. Analogue to digital conversion and data acquisition.			
Intended Learning Outcomes (ILO's)		Student Outcomes (SO's)	Contribution
1	Ability to conduct experiments and analyze interpret data related to types of sensors and transducers and interfacing techniques	B	35 %
2	Apply knowledge of static and dynamic characteristics of complete measurement system components.	A	20 %
3	Be able to use the devices of the lab properly and write scientific report	K	35 %
4	Be able to work in team	D	10 %
Textbook and/ or References			
Laboratory Manuals, Handouts and Data Sheets			
Assessment Criteria		Percent (%)	
Mid. Term Exam		20 %	
Quizzes		10 %	
Laboratory Work		35 %	
Final Exam		35 %	
Course Plan			
Week	Topic		
1	Introduction to Transducers and Interfacing Laboratory		
2	Explanation of the Laboratory Experiments (Group I)		
3	Experiment No. 1: Potentiometer Position Transducer and Signal Conditioner (G22)		
4	Experiment No. 2: Position Transducer with Linear variable Differential Transformer (LVDT) and Signal Conditioner Trainer (G27)		
5	Experiment No. 3: Position Transducer with Encoder and Signal Conditioner Trainer (F09)		
6	Experiment No. 4: Proximity Sensors (G29)		
7	Experiment No. 5: Level - Pressure Transducer (G30A)		
8	Midterm Exam		
9	Explanation of the Laboratory Experiments (Group II)		
10	Experiment No. 6: Pressure Transducer (G24)		
11	Experiment No. 7: Force Transducer (G26)		
12	Experiment No. 8: Flow Rate Transducer (G30A)		
13	Experiment No. 9: Position Transducer Synchro Resolver (G23)		
14	Experiment No. 10: Luminosity Transducer (G31)		

