.

	INSTITUT TEKNOLOGI SEPULUH NOPEMBER (ITS) **FAKULTAS TEKNOLOGI ELEKTRO DAN INFORMATIKA CERDAS** **DEPARTEMEN TEKNIK ELEKTRO** **Program Studi Magister (S2) Teknik Elektro**

1	**Nama Mata Kuliah / *Course Name***	:	Transduser / *Transducers*
2	**Course Code**	:	EE235141
3	**Kredit / *Credits***	:	3 SKS
4	**Semester / *Semester***	:	1

Deskripsi Mata Kuliah / *Course Description*

Mata kuliah ini membahas tentang Temperature Sensors, Force and Pressure Sensors, Photodetectors, Acoustic Sensors, Displacement Transducers, Chemical Sensors, Biosensors, dan Aplikasi Teknologi Transducer.

This course discusses Temperature Sensors, Force and Pressure Sensors, Photodetectors, Acoustic Sensors, Displacement Transducers, Chemical Sensors, Biosensors, and Transducer Technology Applications.

Capaian Pembelajaran Lulusan (CPL) Yang Dibebankan Mata Kuliah / *Program Learning Outcomes Charged to The Course*

1. (CPL-04) Mampu menguasai konsep, prinsip keilmuan secara komprehensif, prinsip rekayasa, dan pengetahuan faktual tentang Teknologi Informasi untuk mengembangkan prosedur dan strategi yang diperlukan pada analisis dan perancangan sistem terkait bidang Teknik Elektro.

   (PLO-04) Able to master concepts, scientific principles comprehensively, engineering principles, and factual knowledge about Information Technology to develop procedures and strategies required in the analysis and design of systems related to the field of Electrical Engineering.

2. (CPL-08) Mampu mengambil keputusan dalam konteks menyelesaikan masalah pengembangan ilmu pengetahuan dan teknologi yang memperhatikan dan menerapkan nilai humaniora berdasarkan kajian analisis atau eksperimental terhadap informasi dan data.

   (PLO-08) Able to make decisions in the context of solving problems in the development of science and technology that pay attention to and apply humanities values based on analytical or experimental studies of information and data.

Capaian Pembelajaran Mata Kuliah / *Course Learning Outcomes*
1. Mampu menganalisa dan mendesain Temperature Sensors, dan Force and Pressure Sensors / *Able to analyze and design Temperature Sensors, and Force and Pressure Sensors.* 2. Mampu menganalisa dan mendesain Photodetectors, dan Acoustic Sensors / *Able to analyze and design Temperature Sensors, and Force and Pressure Sensors.* 3. Mampu menganalisa dan mendesain Displacement Transducers, Chemical Sensors, dan Biosensors / *Able to analyze and design Temperature Sensors, and Force and Pressure Sensors.* 4. Mampu mendesain penerapan Teknologi Transducer / *Able to analyze and design Temperature Sensors, and Force and Pressure Sensors*.
Pokok Bahasan / *Contents*
1. Temperature Sensors / *Temperature Sensors* 2. Force and Pressure Sensors / *Force and Pressure Sensors* 3. Photodetectors / *Photodetectors* 4. Acoustic Sensors / *Acoustic Sensors* 5. Displacement Transducers /*Displacement Transducers* 6. Chemical Sensors / *Chemical Sensors* 7. Biosensors / *Biosensors* 8. Aplikasi Teknologi Transducer / *Applications of Transducers Technology*
Prasyarat / *Pre-requisite*
Elektromagnetika /*Electromagnetics*
Pustaka / *Reference*
Utama / *Primary*: 1. Jacob Fraden, ”Handbook of Modern Sensors: Physics, Designs, and Applications”, Springer, 2016 2. Muhammad Rivai, ”Diktat: Transduser”, 2023