

## Analog Signal Processing Projects

	Projects Name	Specs	# of Students
1	<b>Analog To Digital Converter</b>	a- Sigma Delta 16 bit	3
		b- Successive Approximation 8 bit	3
		c- Voltage to Frequency 8 bit	3
		d- Integrating 12 bit	3
2	<b>Sensor Network</b>	Temperature-Pressure-Fire Alarm Monitoring by Matlab	5
3	<b>RF</b>	NO PCB required- Simulation Only (QUCS)	
		a- LNA freq=2.4 GHz NF<2 Gain>11	3
		b- Mixer $F_{RF}=60\text{MHz}$ $F_{IF}=40\text{MHz}$ $F_{LO}=100\text{MHz}$ $P_{LO}=+8\text{dBm}$	3
	c-PLL $f_{\text{output}}=2.0\text{MHz}-3.0\text{MHz}$ $f_{\text{steps}}=100\text{KHz}$ Lock-Up Times Between Channels=1ms	4	
4	<b>Metal Detector</b>	Pulse Induction Metal Detector Detect metal under soil for 50 cm	3
5	<b>Analog Circuit Design</b>	CMOS based OP-AMP	6
		Solar Cell Charging Circuit	3
		Oscilloscope Basics	5
6	<b>Filters</b>	All Filter Programmable Circuit Design Circuit contain all types of the basic Analog filters : LPF-BPF-HPF Programmable Frequency by User	3