

GUJARAT TECHNOLOGICAL UNIVERSITY

M.E Semester: III

Instrumentation & Control Engineering (Applied Instrumentation)

Subject Name: **Electronics Systems Design (Major Elective – IV)**

Sr. No.	Course Content
1.	Prerequisites: A First Course in Control System Design
2.	Details: Signal conditioning, Instrumentation & Isolation amplifiers, Analog filters, Analog switches, Programmable circuits, Switched-capacitors circuits and applications. A/D and D/A conversion: sampling and quantization, antialiasing and smoothening filters, Data converters, Interfacing with DSP blocks. Signal measurement in the presence of noise:synchronous detection, signal averaging. Noise in electronic systems; design of low noise circuits. Interfacing of analog and digital systems. PCB design and layout; System assembly considerations.

Reference Books:

1. S Sedra and KC Smith, Microelectronic circuits, Oxford, 1998.
2. S. Soclof, Applications of analog integrated circuits, Prentice Hall1990.
3. T. T. Lang, Electronics of measuring systems - practical implementation, Wiley, 1987.
4. P. Horowitz and W Hill, The art of electronics, Cambridge, 1995.
5. H.W.Ott, Noise Reduction Techniques in Electronic Systems, Wiley, 1989.
6. S. K Mitra, Digital signal processing: a computer based approach, McGraw Hill, 1998.
7. W.C. Bosshart, Printed Circuit Boards: Design and Technology, Tata McGraw Hill, 1983.
8. G.L. Ginsberg, Printed Circuit Design, McGraw Hill, 1991.