Course Title: Advanced Design Systems for RF Microelectronics Course Code: EEA 174

Course Background / Summary:

The realm of RF microelectronics demands specialized knowledge and skills to design high-frequency circuits and systems that power wireless communication, radar systems, and other electronic applications. This course focuses on equipping participants with advanced techniques and methodologies required to design, simulate, and optimize RF microelectronic circuits using cutting-edge design systems and tools.

Course Objectives:

- Gain an in-depth understanding of RF microelectronics principles.
- Master advanced design techniques for RF circuits, considering factors such as noise, linearity, and interference.
- Develop proficiency in simulating and optimizing RF circuits using computer-aided design (CAD) software.
- Acquire the skills to design and analyze RF amplifiers, oscillators, mixers, and filters.
- Learn about advanced modulation schemes and their implementation in RF circuits.
- Explore electromagnetic simulation techniques for RF components and transmission lines.

Target Audience:

- Control system engineers seeking to enhance their expertise in PIL techniques.
- Embedded systems engineers interested in integrating control algorithms with processor platforms.

Course Duration: 5 Days

Course Contents

1.0 RF Microelectronics Fundamentals.

2.0 Advanced RF Circuit Design Techniques

3.0 High-Frequency Simulation and Optimization Tools

4.0 RF Amplifier Design and Optimization

5.0 RF Oscillator Design and Phase Noise Analysis

6.0 Electromagnetic Simulation for RF Components and Transmission Lines