Course Title: RF and Microwave Transmission Line Simulation and Analysis **Course Code: EEA 198**

Course Background / Summary:

In the realm of RF (Radio Frequency) and microwave engineering, the design and analysis of transmission lines are critical for ensuring efficient signal propagation and integrity. This course focuses on transmission line simulation and analysis, leveraging advanced tools and techniques to address the complex challenges presented by high-frequency applications.

Course Objectives:

- Understand the importance of accurate transmission line simulation and analysis in RF and microwave engineering.
- Grasp the fundamental principles of transmission lines and their behavior at high frequencies.
- Learn about various transmission line types and their applications in RF and microwave circuits.
- Acquire proficiency in using simulation software tools for transmission line analysis.

Target Audience:

- RF and microwave engineers seeking to enhance their skills in transmission line simulation and analysis.
- Communication system designers interested in optimizing signal integrity and minimizing losses.

Course Duration: 3 Days

Course Contents

1.0 Introduction to RF and Microwave Transmission Line Simulation and Analysis

2.0 Transmission Line Fundamentals: Behavior at High Frequencies

3.0 Types of Transmission Lines: Microstrip, Stripline, Coplanar Waveguide

4.0 Simulation Software Tools for Transmission Line Analysis

5.0 Impedance Matching Techniques and Signal Integrity

6.0 Loss Analysis in Transmission Lines: Dielectric and Conductor Losses