

# **Performance Enhancement of Communication Antennas using Metamaterials**

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In this course we will begin by introducing the fundamentals of Metamaterials for RF and Microwave applications that are artificial dielectrics, comprised of periodic structures with metal or metallo-dielectric inclusions in a background medium. Following this we will discuss the design of superstates for performance enhancement of patch-type antennas. Finally, we will move on to the topic of Metamaterial substrates for bandwidth enhancement of microstrip antennas.

Numerous illustrative design examples will be included in the presentation, including those for the size reduction of microstrip antennas using Metamaterials, with applications to Communication, Sensors and RFID tags.