

AIMS2 Research Project in Electrical Engineering

Duration: Spring 2018 and summer of 2018

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Project title: Antenna Design and Testing

Introduction: Antennas provide connectivity to everyday devices such as the cell phones, laptops, tablets, robots, drones, and many medical devices and thereby allow them to communicate. Antennas come in different sizes, shapes and complexity depending on their applications. It is proposed to design, build and test simple antennas and understand their properties.

Objectives of the Project: Students will be exposed to basics of antennas and their properties. Using simple empirical formulas and computer software available in the antenna laboratory they will study and design antennas such as dipoles, loops, helixes, microstrip patch and dielectric resonator antennas. Using the machine shop facilities available in the college of engineering, they will build some of these antennas. They will test them for the input match and the radiation pattern and gain in the CSUN antenna laboratory.

Expectations: The students will have weekly meetings with the mentors and are expected to work 6 to 8 hours per week.

Outcomes: Students will learn important skills such as studying scientific papers, performing designs based on simple models and computer software. They will build the antennas using the facilities available in the CSUN machine shop. They will be taught basics of antenna measurements and will be able to test the antennas built by them. They will present their project at the AIMS2 symposium. These skills will help them to motivate and do well in their later courses at CSUN and will help them in the job market once they graduate.