

Abstract Submitted
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Incorporation of Antenna Construction and Measurement in Teaching Electro-magnetic Course DAVID LOWRY, MOHAMED OSMAN, Washington State University - Tri-Cities — David Lowry, Mohamed Osman, Washington State University-Tri Cities An Electrical Engineering course in Electricity and Magnetism diverges from the corresponding Physics course after the topics of Maxwell's equations and radiation: transmission lines and antennas are studied rather than special relativity. In order to keep students engaged, they model, build and test their own antennas. The operation frequency of designed antennas ranged from 2.4 GHz Wi-Fi down to antenna for receiving radio stations and TV station signals. The hands on design of the antenna design also allows students to make use of transmission line matching circuits they learnt in the first electrostatics and magneto-statics. The current antenna designs are both standard and novel. The students gain practical experience with NEC-2 modeling, TINA-TI, impedance matching, network analyzers and antenna gain measurements. Here, we present two of the novel designs that have emerged from this effort: a trekking pole configured as either an omni-directional or directional radiator. The antenna is designed for 2m communication in Search and Rescue missions.

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