An Introduction to Electrical Engineering

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The field of Electrical Engineering is a specific field within general engineering discipline that involves itself with the use electricity, electronics, and electromagnetism. It is an incredibly complex subject that has integrated itself into almost every aspect of modern life in the first world. It is so pervasive and integrated into almost every profession that electrical engineers are one of the most in-demand vocations in America, comparable to medical and information technology professions.

The first thing of importance when answering the question of "what is Electrical Engineering?", you have to understand the discipline of engineering as a whole. The discipline of engineering is purely about taking scientific knowledge and applying it to everyday applications. In the field of mechanical engineering one would take discoveries in physics or mathematics and apply those principles to the construction of mechanical systems and vehicles. In the field of chemical engineering, the discoveries of chemistry are applied in the manufacture of various substances such as plastics and pharmaceuticals. In a sense, one can see engineering as the practical application of scientific discovery. Scientists develop new understandings of our physical world and engineers use these findings to craft new and more efficient solutions to our everyday problems.

Electrical Engineering is no different than any other form of engineering in practice, differentiating itself only in its chosen application. Specifically the field deals with power generation and distribution as well as the development of consumer goods and electronics. The field also extends to the practical application of electromagnetic fields, and related categories. There is a large range of devices, ranging from city street lights to satellites in space, that were all

made by electrical engineers. As a result, the discipline of electrical engineering is highly sought after and one of the highest paying engineering professions in the world.

Writing in any engineering discipline follows largely keeps to one distinct sphere: technical writing. Technical communication and by extension what would come to be known as technical writing has been used and developed in western societies, going as far back as the 14th century (O'Hara 2001, p. 501). It has since been a staple of how engineers convey their processes to others, and detail specifications for systems and design. The culmination of this has ended up in the format known as a technical report. A technical report is defined by Dr. Helen Prance in her *Guide to Technical Report Writing*, is a formal report designed to convey technical information in a clear and easily accessible format (Prance 2010, par. 1). Technical Documents are used for just about any level of documentation in any engineering field. They functionally are the main source of conveying any sort of communication in the profession.

From the perspective of research, the field of electrical engineering is no different than any other engineering discipline. By in large, all fields of engineering use a varied selection of research methods being quantitative, qualitative or a mix, with all of these options having pros and cons. However, the most popularly used method of research tends to be almost exclusively quantitative (Borrego, et al. 2009, pg. 63). There is ample reasoning for this, but for simplicity's sake, the more data oriented and empirical nature this style of research lends itself better to the goals of engineering as a whole.

Electrical engineering is a field that while on face is not particularly complex, is an incredibly important field. The number of advancements in electronics over the last fifty years

alone has been staggering. This has turned the field into one of the highest paying professions in the world, and is still developing new technologies and applications everyday. Fields such as electrical engineering have ever-increasing relevance, and are only looking to become more integral to the operation of everyday life in the modern world.

References

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