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Mr. Speice

ISM I

8 September 2017

A Specific Role in a Broad Industry

Research Assessment 1

Date: 9/8

Subject: Mechanical Engineering

Works Cited:

“Mechanical Engineers.” Occupational Outlook Handbook, U.S. Bureau of Labor Statistics, 17

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"Mechanical Engineers." From Green Industries to Green Jobs, edited by Miranda H. Ferrara and

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<http://go.galegroup.com/ps/i.do?p=GVRL&u=j043905010&v=2.1&it=r&id=GALE%7C>

[CX4020600058&inPS=true&linkSource=interlink&sid=AONE&authCount=1](http://go.galegroup.com/ps/i.do?p=GVRL&u=j043905010&v=2.1&it=r&id=GALE%7CCX4020600058&inPS=true&linkSource=interlink&sid=AONE&authCount=1) Accessed

6 Sept. 2017.

Assessment:

The field of Mechanical Engineering can be regarded as a quite vast and complex one; encompassing anything from electronics to manufacturing to designing to testing and even developing new products for companies. The job description itself is quite simple, referring to

Mechanical Engineering as the branch of engineering that deals with machines and systems in motion, but is also described as being the sort of “bridge” between the design stage and marketing stages of a product. Mechanical engineers are also responsible for utilizing software like computer-aided design to design products, work with systems dealing with mechanical and thermal devices or systems, and for prototyping. On average, engineers in this field earn \$84,190 annually, but this can vary from as low as \$53,210 annually to \$126,430 annually. Currently, the job outlook for mechanical engineers is about average, with the Bureau of Labor Statistics expecting a 5% growth in the next few years, or about 14,600 jobs, with the current number of jobs as of 2014 being 277,500. Generally speaking, most mechanical engineers work in offices, (19% work in engineering services) but sometimes also may work in the manufacturing department (15%) where they may oversee the creation of a product. Engineers may also work in the automotive industry, where they design and manufacture systems such as the engine, chassis, transmission, and sensors, or in the aerospace industry where they may design aircraft, engines, or control systems. On a daily basis, an engineer may design parts, improve or make adjustments to pre-existing designs, but often to oversee the manufacturing process. In recent years there has been more emphasis and interconnectivity between the field of engineering and the field of computers, leading to more integration of computer components and computers in newer designs. In recent years there has also been the introduction of new manufacturing techniques such as 3D printing, laser cutting, and CNC machines. These machines help make the design process much smoother, allowing for rapid prototyping as well as direct transfer from the design stage to the manufacturing stage for testing. The requirements for mechanical engineers are relatively low, only needing a bachelor’s degree in ME, but are typically people who have

creative thinking, math, mechanical, and problem solving skills. Mechanical engineers are also encouraged to take computer science and math related classes due to the use of computers and many calculations involved with this field. One final requirement for mechanical engineering is to take the Fundamentals of Engineering (FE) exam which is administered by the National Council of Examiners for Engineering and Surveying (NCEES), which tests basic engineering concepts and a specific topic of engineering like the mechanical field. However, mechanical engineering, being a very broad field that often involves circuitry and computers, also helps to lay the groundwork for other engineering sectors like electrical engineering, computer engineering or computer science, or materials engineering. As the field progresses and continues to grow, these other fields of engineering will most likely be utilized more often and the lines distinguishing them apart will soon be blurred. The integration of computers as well as recent manufacturing techniques like CNC machines will most likely be the focus of my Mechanical Engineering ISM topic.

Overall, I would say that these articles were very valuable at providing the key details about this engineering field, but I would still need to do further research in order to truly understand the career and what work is involved. The articles really described the field in detail, but at some points the article only reinforced some of the prior knowledge I had. However, this article did help guide me toward the more specific field of manufacturing within the mechanical engineering career and more of the Computer Aided Design or CAD aspect of engineering. Since I have already done some 3D printing manufacturing as well as some CAD in my freetime, this article helped me really get more interested in the topic and possibly what my original work

could be based on. Further research of this topic should really help me to solidify and narrow down a specific part of the mechanical engineering field.

Annotated Articles:

Article 1 (multiple site pages):

<http://scribe.com/s/0xJ4A>

<http://scribe.com/s/2FJ4k>

<http://scribe.com/s/2xJ4A>

<http://scribe.com/s/0FZ4k>

Article 2:

<http://scribe.com/s/2xZ4A>