I remember my father took me to a construction site when I was a child. He was a civil engineer running a private consulting firm and I was ten—roughly twelve years away in the past. I, too, still remember vividly how it was a designated hotel finished structurally yet pre-adorned, leaving its exterior to be refined. It’s not very easy to describe the thrill I was sensing as I observed the working crew; I was in-between beguiled and curious. The making of concrete slurry particularly did a job in drawing my attention. For such material to be worked into a strong layer yet bore a surface as smooth it was a delight for ten years old. The jubilance followed home as I began to be keen on watching my father working on his drawings—sometimes letting myself be completely absorbed in it. That now I have sacked a bachelor degree in civil engineering, the excitements and challenges in the process of designing, constructing, and maintaining infrastructures are no more graphic ideations but a real time, real life experience that I carry out daily.

In civil engineering I have found my passion. Seeing buildings, bridges, and basically any structures while on trips are a personal pleasure of mine. I tend to be easily eluded into thinking about the ideas and techniques applied to those structures. During my undergraduate study, my favorite courses were those related to analysis and design of structures. The classes and lab activities were very interesting and the assignments did a number in getting me used to the problems that may apprehend and how to solve them. At the end of the day, I could spend hours in a day reading the textbooks to confirm and explore more about what I learned in the classes and the fields.

As I learned the technical aspects of civil engineering during college, I started to pay attention to the local news from television and online news portals. I was particularly interested in the news relating to infrastructure development in my country. I began to realize that infrastructures play a vital role in the upbringing of a country. Economic activities in a country, which rely much on the function of infrastructures like roads, bridges, seaports, airports, electricity and energy infrastructures, need to be spurred in order to increase economic welfare of society by developing those basic facilities.

Indonesia is one of the developing countries with emerging market that aims to hasten its infrastructural development. The government puts great concern on transportation, food resilience, and maritime sector to fulfill the people’s basic needs and maximize the potential of Indonesian rich waters. The growing economy of Indonesia has made construction activities flourish in both private and public sectors. This opportunity must be seized with proficient workforce in related sectors, especially in civil engineering to advance the technology and, ultimately, to ensure the infrastructures are properly built.

Based on these facts, I feel challenged to improve my skills and comprehend the basic concepts of civil engineering especially in structural engineering before I start to work. By doing so, I hope that I can contribute significntly to the future development, in both my country and the regionals as we prepare the establishment of ASEAN Economic Community in 2015.

The course General Structural Engineering best serves my objectives as it deals with a lot of mathematics and physics, subjects that I loved the most during high school and the first year of my undergraduate studies. I have exceptional grades in most of structural engineering related courses that include engineering mechanics, such as: statics, mechanics of materials, structural analysis, mechanics and design of reinforced concrete, pre-stressed concrete and steel structures, earthquake resistant design of buildings, and as attached.

Because of these achievements, I was offered the privilege of being a teaching assistant in the classes of engineering mechanics: statics and steel structures. I gladly took the chance and I found it very compelling to teach and share knowledge and experience with other students. This teaching experience has showed me that teaching is not an easy job; I had to explain difficult concepts in the simplest ways and cope with different abilities of people to understand the materials. I often felt tired after talking in front of the class and having discussions with the students, but the joy of sharing knowledge and ideas with others was a payment so well earned and I am glad that I have such experience during my campus life.

As part of my undergraduate study, I was obliged to finish a final project and defend it in front of examiners. My topic is about the collapse of a suspension bridge that spanned across the Mahakam River in East Kalimantan. The bridge spanning over 270-m-main and two 100-m-side was called Kutai Kartanegara Bridge. The bridge collapsed in 2011 when a maintenance activity was carried out. The maintenance was aimed to readjust the camber of the deck by the method of jacking. It was done by screwing up the spherical ring through the threaded hanger. As the spherical ring was screwed, the hanger shortened in the hope that the deck would be lifted. The jacking was initially done for the first pair of hanger in the mid span without complete road closure. When the deck collapsed, there were more than 50 people going across the bridge.

The objectives of my final project are to investigate the possible causes and the mechanism of failure and to suggest better design alternatives and also better maintenance procedure. Based on the data on technical specifications, drawings, and the real condition of the bridge before collapsed, I found that several factors affected the fall of the deck. Those factors were anchorage movements, deterioration of materials, defective design of some components, and bad procedure of maintenance. However, the poor design and maintenance were the two governing factors. The jacking method, actually, was very ineffective to lift the deck. Instead, the main cables would stretch. The jacking method also greatly increased the tension forces in hangers and its connections. The upper connection between hanger and main cable was the weakest point since I found an abrupt change of geometry in the design which caused stress concentration.

The examiners agreed with me and said that the result of my investigation was essentially the same with the confidential-remained evaluation report from the ministry of public work. Moreover, I also found another possibility that the collapse was triggered by the failure of lower connection. Rusted threads might not be able to resist the spherical ring during the jacking process thus caused impact force to the upper connection. The examiners expressed their compliments and said that the ministry missed this one. One of them said he found that the threads on the hangers had deteriorated during his inspection right after the collapse.

After completing my bachelor degree, the eagerness to study does not fade away especially structural engineering. I believe an MSc program in structural engineering would be suitable for me. Besides, I have always been challenging myself to pursue a better place to study since junior high school. Studying in the United Kingdom has always been my dream since I discovered that the oldest and the best universities in the world are located in the country. Furthermore, talking about engineering and technology, Imperial College London has always been one of the leading universities.

Finally, it has always been an ambition of mine to be an expert in structural engineering. With my keen ability in analytical, critical and out-of-the-box way of thinking, I feel confident that I can finish MSc Program in General Structural Engineering at *your institution* with excellent results. This will be the most important stepping stone in the path of reaching my future goals.