

## **Educational Philosophy**

The DoMATH ITS is a Mathematics educational institution which focuses on applied mathematics and computation supported by strong analytical and algebraic abilities. Applied mathematics is focused on priority fields of ITS, including industry, information technology, energy, maritime, and the environment. Historically, Mathematics has always played an important role in every technological development and other fields of science.

The industrial revolution 4.0 has been rolling in recent years. This era requires strong analytical skills, understand the foundation of information technology, and the ability to adapt quickly. In order to reach the objective, DoMATH offers the students some courses deliver competency in the form of foundation of mathematical analysis, foundation of data analysis, science, applied mathematics, computer programming, and other general courses. These competencies are delivered to DoMATH ITS students. The objective is that the students are able to learn and solve new problems accurately and quickly. This is the unique characteristic of DoMATH compared to Mathematics study program in other universities.

Therefore, DoMATH ITS graduates have the ability: Able to explain basic concepts of mathematics that includes the concept of a proof construction both logically and analytically, modeling and solving the simple problems, as well as the basic of computing; Able to demonstrate a moral, ethical and good personality in completing the task and respect to the cultural diversity, views, beliefs, and religions; Able to make use of the principles of long life learning to improve knowledge and current issues on mathematics; Able to plan entrepreneurship ideas and understand the technology-based entrepreneurship; Able to solve problems based on theoretical concepts in at least one field of mathematics: analysis and algebra, modeling and system optimization, and computing science; Able to illustrate the framework of mathematical thinking in particular areas such as analysis, algebra, modeling, system optimization and computing science to solve real problems, mainly in the areas of environment, marine, energy and information technology; Able to explain ideas and knowledge in mathematics and other fields to the society, in similar professional organizations or others; and Able to choose decisions and alternative solutions using data and information analysis based on an attitude of leadership, creativity and have high integrity in completing work individually or a team.

This philosophy has been realized since it began with the development of the 1989 curriculum and continues to be developed until now, following the recent developments. In the 2014 and 2019 curricula, three areas of interest are analysis and algebra, applied mathematics, and computational sciences. Mathematics graduates have worked in various fields such as Financial and banking, programmer and analyst, researcher in industry, data analyst, lecturer and teacher, and operational researcher, among others.