

University of Science
Faculty of Physics and Engineering Physics
Department of Physics and Computer Science

Thesis Synopsis

Student Name: Trinh Tich Thien

Student ID: 1313172

Thesis Name: **DESIGN BACHELOR THESIS AND REPORT TEMPLATE IN
LaTeX**

Student Department: Department of Physics and Computer Science

Supervisor: Dr. Nguyen Chi Linh

Workplace: University of Science

Abstract

Nowadays, aside from conventional text processors or editors, LaTeX is an alternative choice for authors with different fields of expertise. It also introduces a completely new philosophy, which differs from many popular text editors, to its user, and easily becomes the most used typesetting system among academic environment. In 1977, Donald E. Knuth first developed the TeX system, which later received further development to become what is known today as LaTeX by Leslie Lamport. Its *raison d'être* was (and will always be) providing utilities for authors to leave the visual design to the typesetting system, and instead, focus on the contents of their works.

Realising that LaTeX is appropriate for composing text with clear and unified standards, and the system itself allows users to design layouts and styles for custom types of documents, this thesis was conceived with the purpose is to design, build a template for bachelor theses. This template will help students spend less time in designing and formatting the visual design of their theses or reports and concentrate more on the contents and logical structure of components of their works, staying true to the ideal of LaTeX's creators.

This thesis integrated necessary packages, configurations and definitions for new commands (or control sequences as Knuth calls them) into a single class file, which will form a standard layout for bachelor theses and reports, the thesis also includes introductory manual to guide users in creating LaTeX environment as well as composing a simple LaTeX input file, which is then built into a human-readable document.

Due to time constraints, the produced class file is still having many flaws, and in need of test-run to evaluate performance and any necessary adjustments. However, the product is enough to become a foundation for future developments; moreover, this thesis's report has

detailed analysis on the structure of the class file and assembles essential documentation, which, when combined with the class file, will serve as a guideline and reference for anyone who wants to build their own class or package for LaTeX.

The thesis's directions for future developments include (for more directions, please read chapter 4 of the report):

- Refer to other class files for new ideas, searching for new packages to offset the shortcomings of this class.
- Define more flexible commands and new formatting environment, modify the produced class to better accommodate document that requires double-sided printing.
- Study the concept of text encoding and font packages to suppress Vietnamese characters encoding warnings that are still present when building LaTeX input file on this class.
- Study about tools and utilities that support writing large and complex classes or packages.