

## Abstract

One of the challenges faced by the campus administration in each trial period is how to build an optimal thesis timetable. There are some things that need to be considered in the preparation, which is how the competence of faculty examiners to the thesis's topic, whether the lecturer appointed examiner was unable to attend or not, and how to schedule will not get conflict in space and time slot that has been provided.

In this study realized a system optimizing thesis timetabling. The system implements a Fuzzy Relation method and Harmony Search Algorithm. Fuzzy Relation used to calculate the level of competence of a professor of the title thesis to be tested, so it can be determined the appropriate faculty to test the thesis. While Harmony Search Algorithm have a role in the preparation of the trial schedule in the available timeslot.

The final results obtained in the study is the Best Harmony optimum schedule of the trial with the minimum fitness cost timetable is achieved 9, in other words for at least a trial can be attended by one supervisor and two examiners. While the minimum competency testing for teachers of TA content was tested at 5. With a fitness cost that minimum competency testing means teachers have the competence or expertise sufficient to test the final task.

**Keywords :** Fuzzy Relation, Harmony Search Algorithm, The Best Harmony, fitness cost.