

UNIVERSITI TEKNOLOGI MARA

TECHNICAL REPORT

**COURSE ALLOCATION USING
DYNAMIC PROGRAMMING**

P41S19

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IN THE NAME OF ALLAH, THE MOST GRACIOUS, THE MOST MERCIFUL

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ABSTRACT

Course allocation is one important aspects of teaching process. In the most teaching units, the task for allocating teaching is generally done by manually. Hence, it consumes a lot of time and inaccurate number of courses given for the lecturer. Due to these problems arising from course allocation in a university, it effects the lecturers where many lecturers carried excess work load while others carried less. Hence, a study on course allocation was conducted to solve course allocation problem. Therefore, the objectives of this study are to analyse course allocation of lecturers according to the position and to formulate Dynamic Programming model for course allocation that maximize the number of contact hours of lecturers. A Dynamic Programming model was developed for allocating contact hours among lecturers which subject to considered constraints. In Dynamic Programming, there will be several state for each stage. This study used forward Dynamic Programming which has five stages and 33 states. The problem is solved recursively where the solution from previous stage will be used in the next stage. Hence, the result of this study indicated that all contact hours of lecturers in each level of courses is maximized.