**PERFORMANCE EVALUATION OF PORTABLE BRIDGES USING NUMERICAL SIMULATIONS AND LABORATORY TESTS**

**AGUSRIL**

**DOCTOR OF PHILOSOPHY**

**UNIVERSITI PERTAHANAN NASIONAL MALAYSIA**

**2014**

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**PERFORMANCE EVALUATION OF PORTABLE BRIDGES USING NUMERICAL SIMULATIONS AND LABORATORY TESTS**

**AGUSRIL**

Thesis submitted to the Centre for Graduate Studies, Universiti Pertahanan Nasional Malaysia, in fulfilment of the requirements for the Degree of Doctor of Philosophy (Civil Engineering)

 **January 2014**

**ABSTRACT**

An abstract should be between 300 and 500 words. It includes a brief statement of the problem and/or objectives of the study, a concise description of the research method and design, a summary of the major findings including their significance, and conclusions.

**ABSTRAK**

Abstrak harus diolah antara 250-500 perkataan. Ia merangkumi pernyataan permasalahan, penerangan ringkas dan tepat tentang reka bentuk dan perkaedahan penyelidikan, rumusan penemuan utama dan kesimpulan.

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**APPROVAL**

The Examination Committee has met on 10th September 2015 to conduct the final examination of Ahmad bin Abu on his degree thesis entitled ‘Performance Evaluation of Portable Bridges Using Numerical Simulations and Laboratory Tests’.

The committee recommends that the student be awarded the Doctor of Philosophy (Civil Engineering).

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**LIST OF ABBREVIATIONS**

|  |  |
| --- | --- |
| UPNM | Universiti Pertahanan Nasional Malaysia |
| MINDEF | Ministry of Defence |
| STRIDE | Science and Technology Research Institute for Defence |

**CHAPTER 1**

**INTRODUCTION**

There may be preamble at the beginning of a chapter. The purpose may be to introduce the themes of the main headings.

**1.1 Introduction**

Paragraph 1 starts here………………………………………………………………...

…………………………………………………….. end here.

 Paragraph 2 starts here…………………………………........................... end here.

**1.2 Objective of the Research**

Paragraph 1 starts here………………………………………………………………...

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Paragraph 2 starts here…………………………………........................... end here.

**Table 1.1: Number of students in UPNM according to faculty, programme and section**

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**1.2.1 Objective 1**

Paragraph 1 starts here………………………………………………………………...

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**Figure 1.1: Sample of……………......**

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