

TABLE OF CONTENTS

ADVISOR ENDORSEMENT	i
THESIS DEFENSE ENDORSEMENT	ii
PLAGIARISM STATEMENT	iii
ISSUE NUMBER	iv
PREFACE	v
TABLE OF CONTENTS	vi
LIST OF FIGURES	viii
LIST OF TABLES	ix
ABSTRACT	xi
<i>INTISARI</i>	xii
CHAPTER I INTRODUCTION	1
1.1. Background	1
1.2. Research Questions	2
1.3. Research Assumptions and Limitations	2
1.4. Objective of Research	3
CHAPTER II LITERATURE REVIEW	4
CHAPTER III THEORETICAL BASIS	10
3.1. 3D Printing Parameters	10
3.1.1. Slicer Settings	10
3.1.2. Nozzle diameter	11
3.1.3. Machine Settings	11
3.2. Drying, Firing, and Sintering of Clay	12
3.3. Flexural Test for Clay	13
3.4. Compression Test for Clay	14
CHAPTER IV RESEARCH METHODOLOGY	16
4.1. Research Design	16
4.2. Research Instruments	16
4.2.1. Research Equipment	16
4.2.2. Materials	18
4.3. Research Location	20

4.4.	Research Procedure	20
4.4.1.	Mixing of clay mixture	20
4.4.2.	Moisture Content Analysis	21
4.4.3.	3D Modeling and Slicing of Specimen	22
4.4.4.	3D Printing of Clay	24
4.4.5.	Firing of Specimen Green Body	26
4.4.6.	Measurement of Specimen	26
4.4.7.	Flexural Strength Testing	27
4.4.8.	Compression Strength Testing	28
4.4.9.	Visual and Physical Observation	29
CHAPTER V RESULTS AND DISCUSSION		30
5.1.	Clay Mixture Uniformity	30
5.2.	3D Printing of Clay	32
5.3.	Effects of Drying and Firing on Printed Clay	35
5.4.	Flexural Strength Testing	38
5.5.	Compressive Strength Testing	39
5.6.	Moisture Analysis	41
5.7.	Visual and Physical Examination	42
CHAPTER VI CONCLUDING REMARKS		45
6.1.	Conclusion	45
6.2.	Suggestions	45
REFERENCES		46