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| **SAMSUN UNIVERSITY** |
| **FACULTY OF AERONAUTICS AND ASTRONAUTICS** |
| **DEPARTMENT OF AEROSPACE ENGINEERING** |

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| **HAVACILIK VE UZAY MÜHENDİSLİĞİ BÖLÜMÜ** |

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| **TASARIM PROJESİ** |
| **İsim SOYİSİM** |

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| This report entitled **PROJECT TITLE HERE** is submitted by **Name SURNAME** to *Samsun University Faculty of Aeronautics and Astronautics* in partial fulfillment of the requirements for the *Bachelor’s Degree* in *Aerospace Engineering.* |
| **Advisor:** | **Name SURNAME** |  |
| **Jury Members:** | **Name SURNAME** |  |
|  | **Name SURNAME** |  |
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|  | **Date:** |  |

If there is one author:

* + use ‘I’ and ‘me’, remove ‘we’ and ‘us’
	+ delete rows of the second Name SURNAME and Signature

If there are two authors:

* + use ‘we’ and ‘us’, remove ‘I’ and ‘me’

**DELETE THIS BOX AND UNDO THE HIGHLIGHTING**

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| I/We declare that this report, which I/we submit to *Samsun University Faculty of Aeronautics and Astronautics* for consideration in partial fulfillment of the requirements for the *Bachelor’s Degree* in *Aerospace Engineering*, has been written by me/us. All data and information in this thesis have been presented in accordance with ethical principles and have not been taken elsewhere, except such work that has been cited and acknowledged properly within the text. |
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**FOREWORD**

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| January 2019 | Name SURNAME |

TABLE OF CONTENTS

TABLE OF CONTENTS ix

ABBREVIATIONS xi

LIST OF TABLES xiii

LIST OF FIGURES xv

SUMMARY xvii

ÖZET xix

1. INTRODUCTION 1

1.1. Literature Review 1

1.2. Purpose of Project 2

1.3. Scope 2

1.3.1.1. Motivation 2

2. ANALYTICAL MODELLING 3

2.1. Euler-Bernoulli Beam Theory 3

2.1.1. Model 1 3

2.1.1.1. Static analysis results 3

2.2. Timoshenko Beam Theory 4

3. RESULTS AND DISCUSSION 6

3.1. Review of Models 6

3.1.1. Model 1 6

3.1.2. Static analysis results 6

3.1.2.1. Dynamic analysis results 7

3.1.3. Model 2 7

3.2. Comparison of Model 1 and Model 2 8

3.3. Effect of Sweep Angle 11

4. CONCLUSION AND FUTURE WORKS 13

4.1. Conclusion 13

4.2. Future Works 13

REFERENCES 14

APPENDIX A 16

APPENDIX B 17

CURRICULUM VITAE 18

ABBREVIATIONS

**CUS :** Circumferentially Uniform Stiffness

**CAS :** Circumferentially Asymmetric Stiffness

**FEM :** Finite Element Method

**xFEM :** Extended Finite Element Method

**FVM :** Finite Volume Method

**FSI :** Fluid Structure Interaction

**BEM :** Blade Element Theory

**IES :** Ion Engine System

LIST OF TABLES

**Page**

1. Table captions.. 4

**Table 3.1 :** Table captions.. 4

**Table 3.2 :** Table captions.. 4

**Table 3.3 :** Table captions.. 4

LIST OF FIGURES

**Page**

[**Figure 1.1 :** Figure caption 1](#_Toc532744447)

[**Figure 2.1 :** Cross-section 4](#_Toc532744430)

[**Figure 2.2 :** Figure caption. 5](#_Toc532744431)

[**Figure 3.1 :** Figure caption 6](#_Toc532744800)

[**Figure 3.2 :** Figure caption 7](#_Toc532744801)

[**Figure 3.3 :** Figure caption 8](#_Toc532744802)

[**Figure 3.4 :** Figure caption 9](#_Toc532744803)

[**Figure 3.5 :** Figure caption 11](#_Toc532744804)

[**Figure 3.6 :** Figure caption 12](#_Toc532744805)

[**Figure A.1 :** (a) Sample figure a, (a) Sample figure b, (b) Sample figure c and (d) Sample figure d 16](#_Toc532744806)

**PROJECT TITLE (ENGLISH)**

SUMMARY

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1. INTRODUCTION

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* 1. Literature Review

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* 1. Purpose of Project

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* 1. Scope

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* + - 1. Motivation

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1. ANALYTICAL MODELLING

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* 1. Euler-Bernoulli Beam Theory

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| $$A=πr^{2}$$ | (2.1) |

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* + 1. Model 1

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* + - 1. Static analysis results

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| $$f\left(x\right)=a\_{0}+\sum\_{n=1}^{\infty }\left(a\_{n}\cos(\frac{nπx}{L})+b\_{n}\sin(\frac{nπx}{L})\right)$$ | (2.2) |

where

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| $$a^{2}+b^{2}=c^{2}$$ | (2.3) |

* 1. Timoshenko Beam Theory

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2. RESULTS AND DISCUSSION
	1. Review of Models

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* + 1. Model 1

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* + 1. Static analysis results

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* + 1. Model 2

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* 1. Comparison of Model 1 and Model 2

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* 1. Effect of Sweep Angle

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2. CONCLUSION AND FUTURE WORKS
	1. Conclusion

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* 1. Future Works

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**APPENDICES**

**APPENDIX A:** Airfoil Data

**APPENDIX B:** Code

APPENDIX A

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| SAMPLE FIGURE | SAMPLE FIGURE |
| (a) | (b) |
| SAMPLE FIGURE | SAMPLE FIGURE |
| (c) | (d) |

1. (a) Sample figure a, (a) Sample figure b, (b) Sample figure c and (d) Sample figure d

APPENDIX B

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| A short biography in text. | **PHOTO** |