



AN ISO 9001:2008 CERTIFIED TRAINING INSTITUTION

NETTUR TECHNICAL TRAINING FOUNDATION

PROJECT REPORT

On

WALKING BICYCLE

PROJECT DONE BY

Sam Jeba Kumar k	NEC 15 15 146
Shanmugavel S	NEC 15 15 154
Sri Ram K	NEC 15 15 172
Surendra	HNTC 15 15 005
Prakash Reddy	HNTC 15 15 011

**DIPLOMA IN MECHATRONICS
NTTF TECHNICAL TRAINING CENTRE
ELECTRONICS CENTRE, BANGALORE-560100
2015-2018**



AN ISO 9001:2008 CERTIFIED TRAINING INSTITUTION

NETTUR TECHNICAL TRAINING FOUNDATION

CERTIFICATE

This is to certify that the Mechatronic system design titled

WALKING BICYCLE

Is a bonafide report of the Mechatronic system design project done by

SAM JEBA KUMAR K	NEC 15 15 146
SHANMUGAVEL S	NEC 15 15 154
SRIRAM K	NEC 15 15 172
SURENDRA	HNTC 15 15 005
PRAKASH REDDY	HNTC 15 15 011

IN PARTIAL FULFILLMENT OF THE REQUIREMENT FOR THE AWARD OF DIPLOMA IN MECHATRONICS UNDER THE INSTITUTION NETTUR TECHNICAL TRAINING FOUNDATION, ELECTRONIC CENTRE, DURING THE ACADEMIC YEAR 2015-2018.

PROJECT INCHARGE

COURSE INCHARGE

PRINCIPAL

EXTERNAL EXAMINER

ACKNOWLEDGEMENT

We would like to take this opportunity to mention a few names, without whom, our project would not be successful. To begin with, we would like to thank our Principal, Mr. R Ayyappan for his constant encouragement and words which pushed us to do better.

Our Vice Principals Mr. A Palani Kumar & Ms. Jasmi K K for their observations and suggestions. A very vital support from our course in-charge Mrs. Sireesha Devi M, who continuously helped us by allowing us time, place and guidance to complete this project.

A moment to appreciate our project in-charges, who were remarkable with their knowledge, patience and wisdom, Mr. Shiju Gangadharan, Mr. K Karthikeyan, Sharmila M V, Mr. Vikneshwarvel P, Mr. Shikhander Ahammed, their endurance and advices would never let us go down. They provided us with continuous guidance and support.

We would like to thank all our teaching and non-teaching staff who have helped us throughout our Mechatronics System Design project within the given time period.

ABSTRACT

Walking bicycle is designs for those humans who love to run outside. Treadmill equipped on bicycle frame formulates a big innovation for the present human life. This bicycle has electronic parts and runs perfectly on human's momentum which is controlled by the microcontroller PIC16F877A. As the rider walks on the treadmill, the belt butts up against the rear wheel propelling the bike forward. Walking bicycle is a device which combines the exercises like running and cycling to deliver a low-impact, high-performance workout. It is a low cost effective, Eco-friendly model which incorporates daily life activities with technology to build a system that can bring in an experience which does multi-tasking.

INDEX

SL.NO	CHAPTER	TOPIC	PAGE NO.
1	CHAPTER 1	INTRODUCTON	1
2	CHAPTER 2	PROJECT IN BRIEF	2
3	CHAPTER 3	MODULAR BLOCK DIAGRAMAND	3
4	CHAPTER 4	COMPARISON	5
5	CHAPTER 5	BLOCK DIAGRAM DESCRIPTION	6
6	CHAPTER 6	MODULE 1: BATTERY & CHARGING CIRCUIT	9
7	CHAPTER 7	MODULE 2:5V POWER SUPPLY	11
8	CHAPTER 8	MODULE 3: BATTERY	15
9	CHAPTER 9	MODULE 4:MICROCONTROLLER	17
10	CHAPTER 10	MODULE 5:SPEED SENSOR	33
11	CHAPTER 11	MODULE 6:PASSIVE INFRARED SENSOR (PIR)	35
12	CHAPTER 12	MODULE 7:LCD DISPLAY	37
13	CHAPTER 13	MODULE 8:DC HUB MOTOR	39
14	CHAPTER 14	MODULE 9: PULSE SENSOR	45
15	CHAPTER 15	COMPONENTS OF WALKING BICYCLE	47
16	CHAPTER 16	DIAGRAMS	56
17	CHAPTER 17	MECHANICAL DESIGN	59
18	CHAPTER 18	OVERALL BILL OF MATERIALS	65

19	CHAPTER 19	SOFTWARE USED	66
20	CHAPTER 20	FLOW CHART AND PROGRAM	67
21	CHAPTER 21	ADVANTAGES AND DISADVANTAGES	74
22	CHAPTER 22	IMPLEMENTATION PLAN	75
23	CHAPTER 23	USER MANUAL	79