ERCIYES UNIVERSITY

FACULTY OF ENGINEERING

DEPARTMENT OF MECHATRONICS ENGINEERING

Graduation Project, MTU-I and MTU-II Sample Project Topics

	Name of Project
1	Vehicle/Human Speed Detection using Image Processing
2	Vehicle Plate Recognition using Image Processing
3	Coin Counting using Image Processing (TL)
4	Traffic Density Detection using Image Processing
5	Reading Texts using Image Processing (Handwriting)
6	Object Detection in Images using Image Processing
7	Lane-Following Autonomous Vehicle using Image Processing (Traffic lights and signs will be considered)
8	Object Tracking Robot using Image Processing
9	Recognition of the Products Bought from Shelves in Stores using Image Processing Technique and Developing a Program That Calculates the Total Purchase Amount
10	Detection of Mobile Robot's Position from Barcodes Pasted in Indoor Locations using Image Processing
11	Robot That can Play Games on Smartphone or Tablet using Image Processing (Reflex Games)
12	Presentation Control with Hand Finger Gestures using Image Processing (Slide Changing, Video Playing Etc.)
13	Checking Weld Seam and Material Presence using Image Processing
14	Developing a Mobile Software That Can Make Instant English-Turkish Translation
15	Marble Cutting Automation
16	Security Control Systems using Face Recognition
17	Security Control Systems using Voice Recognition
18	Voice Controlled Mobile Robot
19	Two-Axis Robot Arm Design
20	Four-Axis Robot Arm Design
21	6 DOF Stewart Platform Design
22	Delta Robot Design and Control (Parallel Robot or Stewart Platform)
23	Robots That Can Play Musical Instruments (Clarinet, Drums, Piano, etc.)
24	Suturing Mini Robot Arm (For Healthcare Area)
25	Robot Arm That Can Arrange Jenga Stones

26	Robot That Can Solve Rubik's Cubes
27	Chess Playing Robot
28	Robot That Can Do Tetris-Like Placement
29	Robot That Can Draw
30	Pneumatic Driven Wall Climbing Robot
31	Cleaning Robot (Robot Vacuum Cleaner)
32	Vacuum Robot Design for Cleaning Glass Surfaces in High-Rise Buildings
33	Two Wheeled Self Balancing Robot
34	(Self-Learning) Maze Solving Robot
35	Soft Robot Application (Robot Working with Contraction and Relaxation Movements)
36	Quadcopter (It will go to desired address and return to starting point)
37	Quadcopter (It will put basketball in hoop)
38	Fish/Submarine Control by Mobile Phone
39	Paperplane Control with Mobile Phone
40	Wired Remote Controlled Underwater Robot
41	Horizontal and Vertical Moving Multi-Elevator
42	Solar Energy Systems on Water (Floating SES)
43	Multi-Floor Car Parking Control System
44	Crane Simulator
45	Failure Analysis using Vibration Sensor
46	Smart Suitcase (Following Owner)
47	Smart Clock (for Visually Impaired)
48	Smart Greenhouse Applications
49	Smart Home Systems
50	Canopy (Umbrella) Design Positionable According to Sun Angle or Solar Energy System
51	Pot Design Bringing Plants to Sunlight
52	Bionic System (Orthotics, Prosthesis, Bionic Hand…) Design
53	Design and Manufacturing of Desktop CNC Milling Machine That Can Work in Three-Axis
54	CNC Router Machine Design That Can Move in Two or Three Axis Cartesian Coordinates
55	Production of Models Designed in CAD Program on CNC Lathe Machine using CAM Program
56	Design and Analysis of Robotic Arm Mechanism using Sim-Mechanics
57	Design and Kinematic and Kinetic Analysis of the Shaper Mechanism using Adams and Ansys-Rigid Dynamics Module
58	3D Printer Design

59	Drone Design
60	Coin Changer Design
61	Money Counter Design
62	A4 Paper Disposal (Chopping) Machine Design
63	Conveyor Belt Design (Adjustable Working Speed and Working Time Intervals)
64	Dimension Control of Materials Moving on Conveyor using Camera
65	4-Axis Robot Arm Design Working using Conveyor Line
66	Conveyor Belt Color Recognition and Differentiation System for Each Color in Its Related Color Box
67	Conveyor Belt Color Recognition - Classification Automation using Pneumatic Cylinder
68	Making Dynamic Modeling using Matlab/Simulink Program
69	PID Control of Dynamically Modeled Systems using Matlab/Simulink Program
70	PID Controlled DC Motor Speed and Position Control
71	PLC Controlled Filling Station
72	PLC Controlled Broken Bottle Differentiation System
73	PLC Controlled Ball Differentiation System
74	PLC Programming Application
75	Distance Measurement with Wheel Encoder
76	Vibrating Sieve Design
77	Design of a Magnetic Compass and Datalogger using Raspberry Pi and Mag3110 Sensor
78	Vibration Analysis and Analytical Comparison of a System Composed of Mass, Spring and Damping using Comsol Program
79	Microprocessor Based System Design That Displays Light, Humidity and Temperature Information in an Environment Simultaneously and Records It with Time Label
80	Unmanned Vehicle Design with Ability to Move Both on Land and in Air
81	Electric Wheelchair Prototype Design That Works via Voice Command and Interacts with Environment
82	Shooting System that Locks and Follows on Target in the Image Taken from Camera
83	Remote Controlled Mobile Robot Project with Location Tracking on Google Earth
84	Coffee Vending Machine Design That Allows to Adjust Ratio of Coffee, Sugar and Milk Analogously and Can be Controlled via Mobile Phone
85	Inverted Pendulum System Motor Control
86	Inverted Pendulum Balance Control with PID Algorithm
87	Automatic Rocking Cradle Application by Detecting Baby Waking with Motion Detector
88	Modeling of Fixed Wing Mini UAV with Solidworks and Investigation of Aerodynamic Effects of Airfoil
89	PID Controller Design for Lateral Motion Control of Fixed Wing UAV
90	A Sensor Application to be Placed on a Walking Stick or Clothing to Detect Obstacles and Warn for the Visually Impaired

91	Attendance Check using Fingerprint and Face Scan at Class Door
92	Calculating the Entry-Exit Hours and Total Working Hours of Workers using RFID Card-Reader and Saving Them to Computer as an Excel File
93	Comparison of Success Rates of Algorithms used by Predicting Handwritten Numbers using Machine Learning
94	Simulative Reflection of Finger Movements with Gloves to Simulink Environment