



Ministry of Higher Education and Scientific Research

University of Mosul

College of Engineering

Department of Mechatronics Engineering



Implementation of Autonomous Farming Robots for Sustainable Agriculture Applications.

**A REPORT SUBMITTED IN PARTIAL FULFILLMENT OF THE
REQUIREMENTS FOR A DEGREE OF BACHELOR OF ENGINEERING (BSc.
ENG.) IN THE DEPARTMENT OF MECHATRONICS**

Prepared by

Toqa Jamall

Jannat Yasir

Athbaa walid

Supervised By

Dr. Omar Saadallah

MOSUL-IRAQ

SPRING-2024



University Of Mosul
College Of Engineering
Mechatronics Engineering
Department



Bachelor's Final Project

Implementation of Sorting Product System in an Industrial Line Application

**A Graduation Project is Submitted to the Mechatronics Engineering
Department in Partial Fulfillment of the Requirements for the Degree of
Bachelor of Science in Mechatronics Engineering**

Subjected by:

Yacob Khaled

Moath Abd-Alwahab

Othman Muhamad

Supervised by:

Dr. Muhamad Azhar Abdillatef AlObaidy

2023 - 2024

Ministry of Higher Education and Scientific Research
University of Mosul
College of Engineering
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DESIGN AND IMPLEMENTATION OF A SELF-BALANCING ROBOT

Prepared by:

Adnan Kanaan Faidhalla

Syfe Alden Mohammed

Nafisa Nassar Mohammed

Supervised By

Dr. Firas Ahmed Aldurze

**MOSUL-IRAQ
SPRING-2024**



University of Mosul
College of Engineering
Mechatronics Department



Bachelor Final Project

**An Implementation of Problems Diagnosis in Air-
Conditioning System**

**A graduation project is submitted to the Mechatronics Engineering
Department in partial fulfillment of the requirement for the degree of
Bachelor of science in Mechatronics Engineering**

Submitted By:

Muhammad Bashar Aldulsttar

Aya Faris

Muhammad Manaf saadi

Haneen Essam

Supervised By:

Dr. Muhamad Azhar Abdilatef Al-Obaidy

2023-2024



University of Mosul
College of Engineering
Mechatronics Engineering Department



A PRORT SUBMITTED IN PARTIAL FULFILLMENT OF THE
REQUIREMENTS FOR A DEGREE OF BACHELOR OF ENGINEERING
(BSc. ENG.) IN THE DEPARTMENT OF MECHATRONICS

Manufacturing of a Balancing Device

Submitted By:

Rayan Nawfal

Abdulah Mohamed

Supervised by:

Dr. Ahmed Wadallah

Dr. Ali Abdel Jalil

2023-2024

**Ministry of Higher Education and
Scientific Research University of Mosul
College of Engineering
Department of Mechatronics Engineering**



Manufacturing and operating of educational two DOF (degree of freedom) haptic device

Prepared by

Osama Rashid Suleiman

Murooj Qusai Ganim

Samy Jassem Mohammed

Supervised By

Dr. Omar Maarooof

MOSUL-IRAQ

FALL 2024



Ministry of Higher Education and Scientific Research

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Mechatronics Engineering Department

**A Smart Solar-Based Irrigation System with Sun Tracking
and Environmental Sensing**

**A graduation project is submitted to the Mechatronics Engineering
Department in partial fulfillment of the requirements for the degree of
Bachelor of Science in Mechatronics Engineering**

BY

Mortada Hilal Khayoun

Mustafa Saad Abd

Meaad Ramadan Suleiman

SUPERVISOR

Dr. Mohammad Falah

2023-2024

Ministry of Higher Education and Scientific Research

University of Mosul

College of Engineering

Department of Mechatronics Engineering



DESIGN AND IMPLEMENTATION A PROTOTYPE DEVICE FOR WIRE FORMATION

Prepared by

OSAMA RABEE

OSAMA MAJID

HUSSEIN ANSAR

Supervised By

Dr. Myasar Salim

MOSUL-IRAQ

FALL 2024



University of Mosul
College of Engineering
Mechatronics Engineering Department



Bachelor's Final Project
Manufacturing of
Rotary Conveyor for lap volt Robot arm

A graduation Project Submitted to The Mechatronics
Engineering Department in Partial Fulfillment of the
requirements for The degree of Bachelor of science in
Mechatronics Engineering

Students:

Amany Khaled

Abdullah Samir

Omar Abdulrahman

Supervisor by:

Dr. Saad Zaghlul



**University of Mosul
College of Engineering
Mechatronics Engineering Department**



Under Graduate Research Project (II)

Manufacturing of an heater for heating a room

**A graduation project is submitted to the Mechatronics
Engineering Department in partial fulfillment of the
requirements for the degree of Bachelor of Science in
Mechatronics Engineering**

4th Stage

Supervised by:

Dr. Loay Bashir Younis

Prepared by:

Omar Raed Mahdi

Yassin Mohammed Hussein

Mohammed Bashir Ahmed

(2023-2024)



Bachelor's Final Project

Design and Implementation of a wireless communication and control system for multiple robots using sensors

A graduation project is submitted to the Mechatronics Engineering Department in partial fulfillment of the requirements for the degree of Bachelor of Science in Mechatronics Engineering.

Under the supervision of:

Dr. Zahraa Tarik Mohammad

Student preparation:

1. Yousef Khaled Hardan
2. Mohammad Basil
3. Madian salal

2024-2023

Ministry of Higher Education and Scientific Research

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"Implementation Of a Line-Following Robot as a Mail Delivery Robot."

Prepared by

Ethar Hameed

Deema Ahmed

Duaa Mohammed

Supervised By:

Dr. Zeyad Mohammed Yosif

MOSUL-IRAQ

Spring 2024

**Ministry of Higher Education and Scientific Research
University of Mosul
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Mechatronics Engineering Department**



MANUFACTURE OF AN AUTOMATIC EGGS INCUBATOR

**A REPORT SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS
FOR A DEGREE OF BACHELOR OF ENGINEERING (BSc. ENG.)
IN THE DEPARTMENT OF MECHATRONICS**

Prepared by:

Zubaida Tariq Qasim

Mariam Mohammed

Sally Aziz

Supervisor By

Dr. SAYF A. MAJEED

Mosul, Iraq

Fall 2024

Ministry of Higher Education and Scientific Research

University of Mosul

College of Engineering

Department of Mechatronics Engineering



Automated sorting system using a robot arm

Prepared by

ADAM SILEEM

ABBAS AMER

DALYA ZAKI KHALIL

Supervised By

Dr. Marwah Ezzulddin Merza

MOSUL-IRAQ

FALL 2024

Ministry of Higher Education and Scientific Research

University of Mosul

College of Engineering

Department of Mechatronics Engineering



**"Enhanced Classification Accuracy in Breast Cancer
Diagnosis Using Refined Fuzzy Min-Max Neural
Networks with Preprocessing Techniques-
Implementation and Performance Evaluation"**

Prepared by

Almutasim Abd Jassim

Zubaida Alaa yahya

Supervised By:

Dr.Mohammed Falah Mohammed

MOSUL-IRAQ

Spring 2024

Ministry of Higher Education and Scientific Research

University of Mosul

College of Engineering

Department of Mechatronics Engineering



Design And Implementation of Real-Time AI Object Detection for Mobile Robot Applications

Prepared by

Aya Mahmoud Shaker

Khalel Saeed Khalel

Srour Saad Fawzi

Supervised By

Dr. Mohammed Yaseen Hazim

**University of Mosul / Iraq
May / 2024**