



<b>Department:</b>	<b>Mechanical Engineering – Mechatronics</b>	
<b>Project:</b>	<b>Auto Parking Vehicle</b>	
<b>Supervisor:</b>	<b>Dr. Mohamed Mabrouk</b>	
<b>Students:</b>	Mina Samy Gad Abdalla	
	Shady Atef Farouk	
	Hussien Abdel Salam	
	Omar Walaa Shaaban	
	Moheb Tarek Sobhy	

**ABSTRACT**

During the project, the students have designed the mechanical part of the machine. This includes the preparation of engineering drawing, workshop drawings and calculation sheets. The mechanical parts have been manufactured and assembled according to the design. The control strategy and control system have been developed by the students. The control system consists from hardware, such as electronic circuits, and software, such as motion control and user interface. The system has been established and tested. The tests prove the system workability and accuracy.

The project contains all the mechatronics branches. It contains mechanical system, which is controlled using electronic circuits. The control strategy is contained in software. All the system parts have been developed and executed by the students.



<b>Department:</b>	<b>Mechanical Engineering – Mechatronics</b>
<b>Project:</b>	<b>Development of a concrete Pump boom</b>
<b>Supervisor:</b>	<b>Dr. Mohamed Mabrouk</b>
<b>Students</b>	<b>Hossam Eldin</b>
	<b>Amr Hesham Abdelaziz</b>
	<b>Beshoy Nagy Nassif</b>
	<b>Mohamed talaat Abutaleb</b>
	<b>Ahmed Mahmoud Allam</b>
<b>ABSTRACT</b>	
<p>During the project, the students have designed the mechanical part of the machine. This includes the preparation of engineering drawing, workshop drawings and calculation sheets. The mechanical parts have been manufactured and assembled according to the design. The control strategy and control system have been developed by the students. The control system consists from hardware, such as electronic circuits, and software, such as motion control and user interface. The system has been established and tested. The tests prove the system workability and accuracy.</p> <p>The project contains all the mechatronics branches. It contains mechanical system, which is controlled using electronic circuits. The control strategy is contained in software. All the system parts have been developed and executed by the students.</p>	



<b>Department:</b>	<b>Mechanical Engineering – Mechatronics</b>
<b>Project:</b>	<b>Generating Power electricity Using Solar and Wind Energy</b>
<b>Supervisor:</b>	<b>Dr. Eltantawy Mohamed</b>
Students	Ibrahim Mohamed Mohamed Ali
	<b>Karim Shaker Farid Draz</b>
	<b>Youssef Yasser Saafan</b>
	<b>Mostafa Mohamed Nagib Elrefaie</b>
<b>ABSTRACT</b>	
<p>During the project, the students have designed the mechanical part of the machine. This includes the preparation of engineering drawing, workshop drawings and calculation sheets. The mechanical parts have been manufactured and assembled according to the design. The control strategy and control system have been developed by the students. The control system consists from hardware, such as electronic circuits, and software, such as motion control and user interface. The system has been established and tested. The tests prove the system workability and accuracy.</p> <p>The project contains all the mechatronics branches. It contains mechanical system, which is controlled using electronic circuits. The control strategy is contained in software. All the system parts have been developed and executed by the students.</p>	



<b>Department:</b>	<b>Mechanical Engineering – Mechatronics</b>
<b>Project:</b>	<b>Home Automation</b>
<b>Supervisor:</b>	<b>Dr. Jean khalil</b>
students	Shehab Eldin Amgad
	<b>Andrew Rober Louad</b>
	<b>Abdelrahman Muhamed Sayed</b>
<b>ABSTRACT</b>	
<p>During the project, the students have designed the mechanical part of the machine. This includes the preparation of engineering drawing, workshop drawings and calculation sheets. The mechanical parts have been manufactured and assembled according to the design. The control strategy and control system have been developed by the students. The control system consists from hardware, such as electronic circuits, and software, such as motion control and user interface. The system has been established and tested. The tests prove the system workability and accuracy.</p> <p>The project contains all the mechatronics branches. It contains mechanical system, which is controlled using electronic circuits. The control strategy is contained in software. All the system parts have been developed and executed by the students.</p>	



<b>Department:</b>	<b>Mechanical Engineering – Mechatronics</b>
<b>Project:</b>	<b>Smart Automatic Interior Wall Plastering Robot</b>
<b>Supervisor:</b>	<b>Dr. Mohamed Abdellatif</b>
Students	Mohamed Mohamed Hesham
	<b>Fady Hany Zaki</b>
	<b>Michael Maher Kamel</b>
	<b>Mohamed Emad Aldein Farahat</b>
	<b>Ahmed Asaad Ahmed</b>

**ABSTRACT**

During the project, the students have designed the mechanical part of the machine. This includes the preparation of engineering drawing, workshop drawings and calculation sheets. The mechanical parts have been manufactured and assembled according to the design. The control strategy and control system have been developed by the students. The control system consists from hardware, such as electronic circuits, and software, such as motion control and user interface. The system has been established and tested. The tests prove the system workability and accuracy.

The project contains all the mechatronics branches. It contains mechanical system, which is controlled using electronic circuits. The control strategy is contained in software. All the system parts have been developed and executed by the students.



<b>Department:</b>	<b>Mechanical Engineering – Mechatronics</b>	
<b>Project:</b>	<b>Line Following Robot</b>	
<b>Supervisor:</b>	<b>Dr. Mohamed Ibrahim</b>	
<b>Students:</b>	Hussien Anwar Husien	
	Maret shokry Mounir	
	Marc Ehab Guirguis Wakim	
	Momen Mohamed walaa	
	Mohamed Ashraf Hoda	

### ABSTRACT

Line follower is a machine that can follow a path. The path can be visible like a black line on a white surface (or vice-versa) or it can be invisible like a magnetic field. Sensing a line and maneuvering the robot to stay on course, while constantly correcting wrong moves using feedback mechanism forms a simple yet effective closed loop system. The software program teaches the robot how to follow the required line through the suitable sensor. Practical applications of a line follower: Automated cars running on roads with embedded magnets; guidance system for industrial robots moving on shop floor etc. This project illustrates and discusses robot carrying object application.

During the project, the students have designed the mechanical part of the machine. This includes the preparation of engineering drawing, workshop drawings and calculation sheets. The mechanical parts have been manufactured and assembled according to the design. The control strategy and control system have been developed by the students. The control system consists from hardware, such as electronic circuits, and software, such as motion control and user interface. The system has been established and tested. The tests prove the system workability and accuracy.

The project contains all the mechatronics branches. It contains mechanical system, which is controlled using electronic circuits. The control strategy is contained in software. All the system parts have been developed and executed by the students.



<b>Department:</b>	<b>Mechanical Engineering – Mechatronics</b>	
<b>Project:</b>	<b>Robot Arm Human follower</b>	
<b>Supervisor:</b>	<b>Dr. Mohamed Ibrahim</b>	
<b>Students:</b>	Ahmed Adel	
	Mohamed Hani Abo Alkhair	
	Ahmed Mohamed Nabil	
	Hossam Mahrous Mitwally	

### ABSTRACT

This Project presents a humanoid robotic arms controlled by tracking the human movement in real-time using upper limb body. Tracking algorithm, the positions of upper limb arms of the body to the wrist in 3D space can be estimated by processing shaft Encoder sensor. An extraction of 2D co-ordinates of the user’s both arm in real-time then Arduino microcontroller is transferring the data between both of computer and the humanoid robotic arm via wireless connection. This method provides a way to send movement task to the humanoid robotic manipulator instead of sending the end position motion approaches and this method has been tested in detect tracking and following the movement of the human. Designing complete prototype of a humanoid robotic arms with 3DOF three joints in shoulder and one elbow joint to the wrist that look like the Human arm Structure. Appearance and Action that represent human arm movement performed by the humanoid robotic arm has a small error and fast response.

During the project, the students have designed the mechanical part of the machine. This includes the preparation of engineering drawing, workshop drawings and calculation sheets. The mechanical parts have been manufactured and assembled according to the design. The control strategy and control system have been developed by the students. The control system consists from hardware, such as electronic circuits, and software, such as motion control and user interface. The system has been established and tested. The tests prove the system workability and accuracy.

The project contains all the mechatronics branches. It contains mechanical system, which is controlled using electronic circuits. The control strategy is contained in software. All the system parts have been developed and executed by the students.



<b>Department:</b>	<b>Mechanical Engineering – Mechatronics</b>	
<b>Project:</b>	<b>Development of a prominent image generator</b>	
<b>Supervisor:</b>	<b>Dr. Mostafa Rostom A. Atia</b>	
<b>Students:</b>	Khalid Ibrahim Ammar	
	Karim Taha Ataia	
	Omar Hassan Mohamed	
	Tarek Amin	

**ABSTRACT**

Blind is a real problem in Egypt and world. Protruded symbols on paper are well known method to introduce text to blind persons. Introducing images to blind faces difficulties. Protruded image is a good solution to show the blind some details of images. In this project a device for generating protruded image is developed. The image is formed from a matrix of pins, which protruded in different heights. The heights are controlled using a system of stepper motors. The machine is designed, manufactured and tested in real cases. The control system is based on microcontroller.

During the project, the students have designed the mechanical part of the machine. This includes the preparation of engineering drawing, workshop drawings and calculation sheets. The mechanical parts have been manufactured and assembled according to the design. The control strategy and control system have been developed by the students. The control system consists from hardware, such as electronic circuits, and software, such as motion control and user interface. The system has been established and tested. The tests prove the system workability and accuracy.

The project contains all the mechatronics branches. It contains mechanical system, which is controlled using electronic circuits. The control strategy is contained in software. All the system parts have been developed and executed by the students.





<b>Department:</b>	<b>Mechanical Engineering – Mechatronics</b>	
<b>Project:</b>	<b>Development of a rapid prototyping machine</b>	
<b>Supervisor:</b>	<b>Dr. Mostafa Rostom A. Atia</b>	
<b>Students:</b>	Mostafa Abd-El-Rehim	
	Mohamed Sayed Ali	
	Sherif Magdi Ali	
	Mohamed Ahmed Gad	
	Mahmoud Hanafy	

**ABSTRACT**

Rapid prototyping machine is a modern technique for generating 3D model from 3D CAD file. The machine uses polymers to print consecutive slices of the required shape to generate the solid model. It is fast and accurate machine. The machine is designed, manufactured and tested in real cases. The control system is based on a stepping system and microcontroller.

During the project, the students have designed the mechanical part of the machine. This includes the preparation of engineering drawing, workshop drawings and calculation sheets. The mechanical parts have been manufactured and assembled according to the design. The control strategy and control system have been developed by the students. The control system consists from hardware, such as electronic circuits, and software, such as motion control and user interface. The system has been established and tested. The tests prove the system workability and accuracy.

The project contains all the mechatronics branches. It contains mechanical system, which is controlled using electronic circuits. The control strategy is contained in software. All the system parts have been developed and executed by the students.



<b>Department:</b>	<b>Mechanical Engineering – Mechatronics</b>	
<b>Project:</b>	<b>Development of a concrete block testing machine</b>	
<b>Supervisor:</b>	<b>Dr. Mostafa Rostom A. Atia</b>	
<b>Students:</b>	Amr Yasser Fahmy	
	Haisel Salman Awad Selim	
	Waleed Ali Ahmed El-Sakalledy	

### ABSTRACT

During concrete building construction, samples from the concrete are collected for later testing. These samples are in the form of blocks. The conducted test is a compression test to achieve the ultimate stress of the concrete. In this project a hydraulic testing machine is designed and manufactured. The force is measured indirectly through a pressure transducer in the hydraulic circuit. The deflection is measured using a linear transducer. The sensors reading are used to generate the stress strain curve and then the ultimate stress is extracted.

During the project, the students have designed the mechanical part of the machine. This includes the preparation of engineering drawing, workshop drawings and calculation sheets. The mechanical parts have been manufactured and assembled according to the design. The control strategy and control and measuring systems have been developed by the students. The control system consists from hardware, such as electronic circuits, and software, such as motion control and user interface. The system has been established and tested. The tests prove the system workability and accuracy.

The project contains all the mechatronics branches. It contains mechanical system, which is controlled using electronic circuits. The control strategy is contained in software. All the system parts have been developed and executed by the students.



<b>Department:</b>	<b>Mechanical Engineering (Mechatronics)</b>	
<b>Project:</b>	<b>Jojoba Bio-Diesel</b>	
<b>Supervisor:</b>	<b>Assoc. Prof. Dr. Sameh Shaaban</b>	
<b>Students:</b>	Sherif Ibrahim Aboomar	Bassem Ahmed Anwar
	Abdelaziz Ahmed Kamal	
	Ahmed Abdellatif	

### **ABSTRACT**

A machine for producing bio-diesel from Jojoba was designed and manufactured. All electrical connections and control systems were also designed and implemented.

**1-Mechanical System Design:**

All mechanical elements were designed and checked against stresses. These elements were also manufactured in different workshops.

**2- Electrical and Electronic System Design:**

Electrical and control systems were also designed, manufactured, tested and implemented.