UNIVERSITY OF MAURITIUS
FACULTY OF ENGINEERING

Mechanical and Production Engineering Department
http://www.uom.ac.mu/Faculties/FOE/MPED/index.asp

B. Eng (Hons.) Mechatronics

Introduction

Mechatronics is described as the synergistic combination of mechanical engineering, electronics, control engineering, and computers in the design of products and manufacturing processes. Mechatronics is multi disciplinay and the engineers must have an interest in a wide range of rapidly evolving technologies. The Mechatronics programme combines mechanical, electrical/electronic and computer modules in an attempt to demonstrate the close integration of these disciplines in product design and process control.

Mechatronics has evolved as a distinct field from the traditional mechanical and electrical engineering as from the early eighties. There was a growing need to have qualified persons to design and maintain the ever-increasing complex systems, which were available on the market with the advent of new technologies. The products that can be considered as a Mechatronics system range from the common washing machine or CD player to the unmanned factory or vehicle.

Programme Entry Requirements

2 GCE 'A' Level Passes in Mathematics and one of the following subjects: Physics, Physical Science, Engineering Science, Physics with Chemistry, Design & Technology (Technology). *(See University Entry requirements also)*

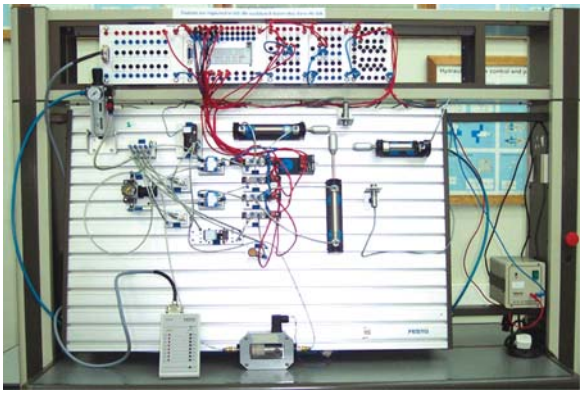
Programme

The programme was launched in 1997 with the first batch graduating in 2001. Since then the University of Mauritius has produced an average of 25 Mechatronics Engineers every year. The B.Eng (Hons.) in Mechatronics is of 4 years duration but students have a maximum of 7 years to complete the programme.

The response from the industry has been very positive and the Mechatronics engineers produced by the UoM have adapted nicely to all sectors of the economy. The programme has been revised every five years to cater for the rapid development and changes in the Mechatronics field over the years. The University of Mauritius has also drastically increased the intake to increase the access to this very popular programme. This shows the Department's commitments to support the development and needs of the country.

Programme Structure

The Programme offers both theory and laboratory work designed to enable the students to understand the principles underlying the application of intelligent controllers in the control of machine components. The knowledge and skills gained will be useful to deal with a broad range of engineering products such as robotics, automated production systems, consumer goods, process control, etc… The scheme of study also offers adequate background for further studies/research at graduate level and beyond both locally and abroad.



A PLC based Labwork

The students are given the basic tools to allow the modeling, analysis and control of complex system without physically building and testing the actual system, which may be expensive. This provides the students with a blend of technologies, which will provide the most economic, elegant, and appropriate solution to the problem at hand.

There are various categories of modules such as: basic engineering, mathematics, electronics, electrical engineering, mechanical engineering, automation and robotics, and safety engineering.

They are not limited to a single industry and the engineers can adapt easily to any industry, which require their expertise.

Laboratories and Facilities.
The students will have lots of hands on labworks in the following Department laboratories to apply the basic principles learnt in the different engineering modules.
http://www.uom.ac.mu/Faculties/foe/MPE/laboratories.htm

- Fluid Power & Robotics
- CAD/CAM
- CAD Studio
- Thermodynamics
- Structural Mechanics
- Mechanical Workshop.
- Metallurgy
- Metrology

The Hydraulics Workbench

Additionally, the students will also be working in the Electronics Lab, Microprocessor Lab., Machines Lab, and Fluid Dynamics Lab, which are under the responsibilities of other Departments in the same Faculty.

The final year students spend a lot of their time in one or more of these Labs in connection with their project works

Practical training/Industrial interaction
Vacation Training which supplement the labworks already included in most modules. Additionally, the students have to spend one semester (full time) in an industrial environment, to give the practical engineering exposure. This helps the students to apply the knowledge gained previously to solve actual problems and to get acquainted with the usual design and maintenance practices.

CNC Boxford Lathe

The students have to complete a final year project as partial requirement for the award of the degree where they try to combine all the knowledge gained over the three years plus some additional research. A lot of industry based project have been completed successfully in the past and a list of final year projects are available on the department website.

Industrial visits are also organized during the semester.

Skills of Mechatronics Engineers.

The programme is aimed at creating Mechatronics Engineers who will be successful in:

- Problem solving
- Creativity
- Hands-on understanding
- Teamwork/Networking
- Leadership

- Lifelong learning

Job Prospects

Graduates with a B.Eng (Hons.) in Mechatronics can be registered with the Council of Registered Professional Engineers (CRPE).

The job prospect is very wide for the graduates with a B.Eng (Hons.) in Mechatronics. The major sectors where their expertise are sought are maintenance (of manufacturing systems, tourism industry, para-statal bodies, sugar industry) design and implementation of automation systems, production engineers, sales engineers, security services, and many others. Graduates have also been hired by major ICT company for training purposes that have lead to employment.

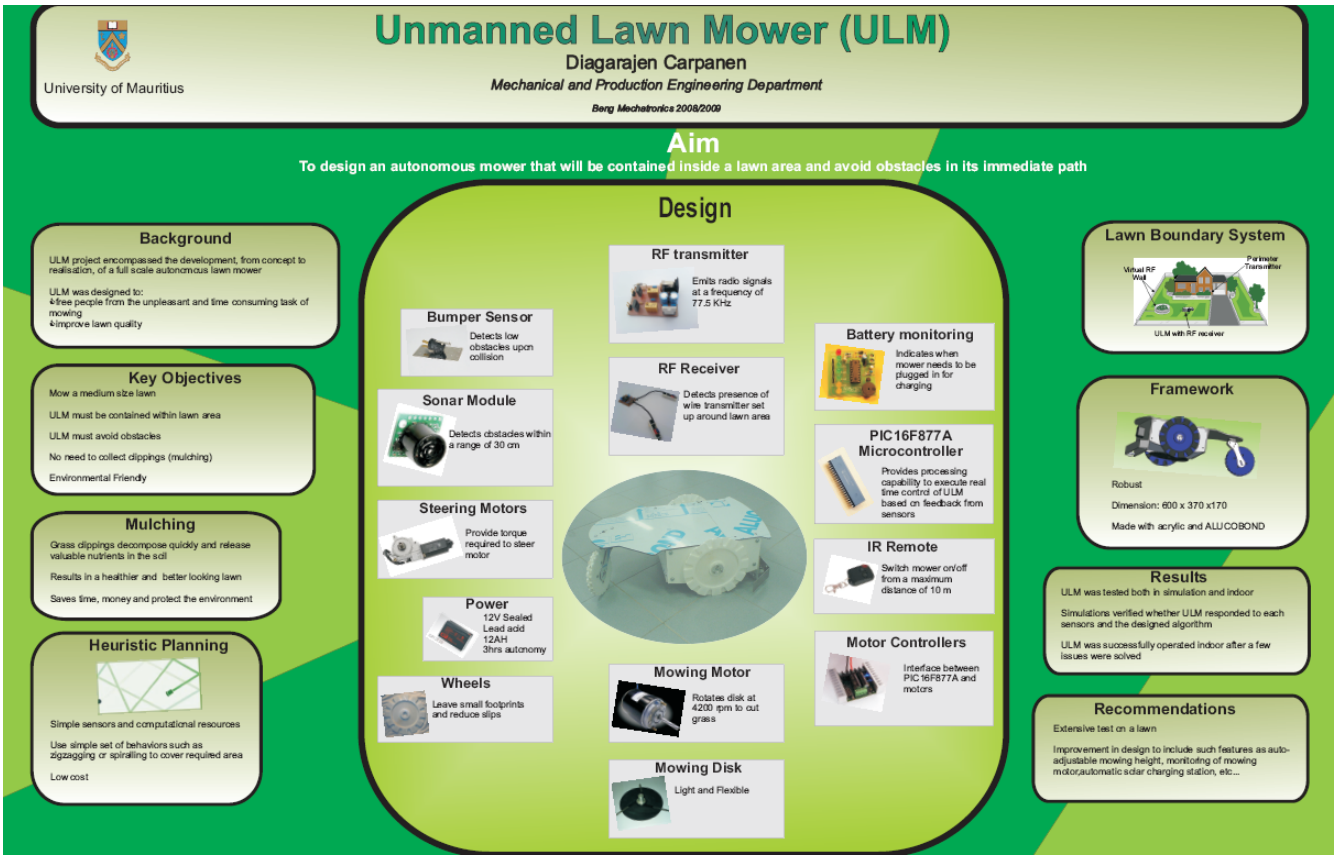
Further Studies.

Many of our graduates have successfully completed Masters and Doctoral (PhD) Degrees overseas in countries like France, United Kingdom, Sweden, Germany, New Zealand, United States and Australia. Many of them have benefitted from scholarships offered by foreign Universities and international organizations.

More Information

- **Email: haree@uom.ac.mu**
- **Or website**

http://www.uom.ac.mu/Faculties/FOE/MPED/index.asp



Final Year Project Poster presentation – Jul 2009