



IED Malta Student Award Event



For the seventh consecutive year, IED Malta will organize the IED Malta Student Award. Final Year projects presented by fourth year mechanical engineering students in the Faculty of Engineering Exhibition in July 2010, were assessed on a number of criteria. The three shortlisted students, their respective project titles and their placement in this IED Malta student award edition are given below. You are being invited to attend for the presentations of these projects

Thursday 7th July 2011

13.30 – 14:30hrs

Engineering Lecture Theatre (ELT), Faculty of Engineering

Joanna Tabone:

Design of a Novel "Mascara Application" Device

The application of liquid mascara lies in the mascara applicator. Despite the large number of different mascaras and mascara applicators are available on the market, about 87% of mascara users claim that they have encountered some type of problem during application at one point or another. The aim of the project was to design an application system which counteracts the problems currently encountered whilst bringing about the required effects. The main problems which are commonly encountered by mascara users include smudging and clumped lashes whilst the major desired effects of mascara are length and volume. A number of concepts for mascara application devices were drawn up and analyzed.

Maria Victoria Felice:

Development of a Modular and Ergonomic Surgical Instrument Handle Prototype

Minimally invasive surgery (MIS) is becoming increasingly popular in various areas of surgery, including plastic surgery. MIS offers a lot of advantages to the patient but is more demanding on the surgeon, therefore a lot of research work is carried out to improve MIS instrument handles. Improvements need to be made in terms of ergonomics and also modularity, so that the same handle can be used by different surgeons regardless of their handedness, hand size and gender. The main aim of this project was to develop a modular and ergonomic surgical instrument handle for facial plastic surgery procedures that could be used comfortably by most surgeons. This aim was reached and a prototype of the designed handle was manufactured.

Miray Mifsud:

Vibration Monitoring and Testing of Rotary Machines

The early detection, identification and correction of machine failure, is paramount to ensure a continuous safe and productive operation. This can be achieved by employing a condition based monitoring and proactive maintenance strategy, such as vibration monitoring and analysis. The vibration signals contain a wealth of complex information that characterizes the dynamic behavior of the machinery. The aim of this dissertation was to introduce this concept to the local industry, establish the merits and identify maintenance procedures to maximize productivity. This study was divided into two parts. The dynamic loading due to shaft and rotor imbalance is the most common source of fatigue failure leading to machine shutdown. Hence, in the first instance, this study consisted of the design and construction of a dynamic balancing machine to investigate and minimize dynamic unbalance loading in rotary machine. Vibration analysis studies progressed by inducing faults on to a vibration rig which was set up on the balancing machine. The fault signature frequency spectra of the faults together with those found in literature were used to perform fault analysis on two set up examples. The result obtained demonstrates the beneficial characteristic of vibration monitoring and thus it is highly recommended to be introduced in any maintenance strategy to foresee any faults which lead to costly breakdowns.

Industrial and Mechanical Engineering students at the University of Malta who participated in a global design exercise with students at the University of Strathclyde, UK, will also be presented with participation certificates.

Attendance is free but you need to reserve a place by phoning 2340-2061 or email to: sharlene.cachia@um.edu.mt. Light refreshments sponsored by IED Malta will be served after the event