

Science, Technology, & Engineering Outlook

Advanced Technical Education Dept. Newsletter

SCME MEMS

The University of New Mexico and Central New Mexico has invited S.I.P.I. to their highly structured clean room. A clean room is a secured room that is specialized to keep small particles from falling onto their structure called microelectromechanical systems (MEMS). These devices are used as sensors that can be used in both electrical and mechanical mechanisms.

Precautionary tests are evaluated before one may enter. The tests consists of information about the clean room setup and its requirements due to potential risks. One of the main observances are the National Fire Protection Association (NFPA) symbols which can cause certain harms such as blue-health, red-flammable, yellow-reactive, white-other (personal equipment).

One should allow about 4 hours of research and documentation to complete the



test. The proper attire must be worn such as wearing a short sleeved shirt, sneakers, and long pants. Upon entering the room, complete gowning coverage from bottom to top is implemented and rubber covering is especially worn when handling acids.

It is the Manufacturing Engineering Program at the University of New Mexico that will give the students of S.I.P.I. an opportunity

for both the Intro. to Engineering and Design and Manufacturing Concepts and Practice 1. Lab courses a hands on experience in creating a design on a wafer. A wafer is a disk that undergoes a microfabrication process. It will be an introduction to MEMS Fabrication when the students are able to put a drawing of their own choosing on a 6in. circular disk.

Special points of interest:

- Clean room safety tests
- 4 Projects for ENGR 105 class
- 2nd 2008 Summer R.O.P.E. internships
- Workshop on Engineering Studies
- School of Engineering has scholarships for undergraduates.

Engineering 105 Teams

The Spring 2008 Introduction to Engineering and Design class is based upon demonstrating the understanding of the scientific approach. In this, the process includes collecting, analyzing, and communicating the data effectively.

In order to achieve this, four teams were put together to demonstrate the engineering principles of analyzing prob-

lems and pose viable solutions. Team A: is the construction of a Mars Yard. Team B: is a Fire-fighter Robot. Team C: is a simulated Mars Rover Design. Team D: is a Solar Bike.

Each team includes interns from the ICMARS program. These research assistants and team members meet at least once a week on the development of their projects.

Logbooks were used to take informative notes on the progress that is used as a guide for the final product. The logbooks will be used for future engineers to carry on the tasks. A power point presentation is given on the progress that was accomplished with the resources provided.

Second SIPI-SKC ROPE 2008 Summer Institute

The Advanced Technical Education Department of Southwestern Indian Polytechnic Institute, will hold its 2nd “SIPI-SKC ROPE Summer Institute” and “Exploring Engineering and Engineering Technology” for students from June 9–August 15, 2008.



Please check out the following NSF-ATE link for more information:

https://www.teachingtechnicians.org/event_details.asp?ed=409



“YOU LEARN AS MUCH FROM THOSE WHO HAVE FAILED AS FROM THOSE WHO HAVE SUCCEEDED.”

—Michael Johnson

Summer Internships

The faculty from tribal colleges, Native American serving middle and high schools are invited to participate in a two-week Workshop on “Development of Engineering and Engineering Technology Programs for Tribal Colleges” scheduled for August 4-15, 2008. This workshop made possible by an NSF grant and planned for 10 science, engineering and mathematics instructors from tribal colleges. Each participant will be

provided with a stipend of \$1,000 and expenses for travel, hotel and meals.

SIPI will make this workshop a learning experience by presenting the steps for starting an engineering program. For a meaningful experience, we previously sent a survey on the topics that will be emphasized at the workshop. Based on the response, we have prepared an agenda that is included with this invitation.

The institutions interested in starting a pre-engineering, engineering or engineering technology program or in the preparation for sending students to an engineering program in a tribal college, will benefit from this Workshop on Engineering Studies.

The application form must be returned to Dr. Nader Vadiiee (nvadiiee@sipi.bia.edu) by April 25, 2008.

More Opportunities

The School of Engineering has scholarships for undergraduates. This is open to all students admitted or in the process to be admitted in the SOE by the time of application for the scholarship.

The School of Engineering (SOE) offers a variety of scholarships to undergraduate

students enrolled in any of the SOE majors, including students admitted into the pre-major engineering program. These scholarships usually supplement any other general scholarship received at the university level. For further information please visit

<http://www.unm.edu/~soeshol/undergraduate.html>. The deadline for the Summer 2008 postmark is May 10, 2008. The 2008-2009 postmark deadline is June 1, 2008.