

ENGINEERING, MANUFACTURING AND INDUSTRIAL TECHNOLOGY (EMIT)

*A Quarterly Newsletter for Teachers and Students Focusing on Recent Events and Developments in
the EMIT Pathway*

Office of Career and Technical Preparation

September 2007

Welcome back from 2007 summer vacation. I hope that everyone had a great time and is ready for an exciting 2007-08 school year. **PLEASE REMEMBER TO SHARE THIS NEWSLETTER WITH YOUR STUDENTS.** It is important that they stay abreast of the many changes and opportunities in industry. During the last few months, our director announced to the administrators that The Office of Career and Technical Preparation transferred to the Michigan Department of Education. We are excited about this move and have already started attending staff meetings. Our P.O. Box remains the same. you will be notified at a future date when our street address changes.

As always, the EMIT Newsletter is dedicated to locating educational opportunities and resources for teachers and students. If you find great leads, please forward them to the editor, Patricia Talbott, EMIT Pathway Consultant, talbott@michigan.gov.

2. 14.3801–Surveying Engineering. A program that prepares individuals to apply scientific and mathematical principles to the determination of the location, elevations, and alignment of natural and manmade topographic features. Includes instruction in property line location, surveying, surface measurement, aerial and terrestrial photogrammetry, remote sensing, satellite imagery, global positioning systems, computer applications, and photographic data processing.

The approved program standards for both of these new programs are still “Under Development”. However, the teacher hired to deliver these programs could have a Bachelor Degree in Advanced Math, Science and/or Engineering; with a vocational endorsement in Drafting & Design, Electrical and Electronics, Machine Tool, Automotive Technology, or Electro-Mechanical.

NEW STATE APPROVED CTE PROGRAMS

The EMIT Pathway now has two new state approved program offerings for Michigan schools. After the 2007-08 new program application hiatus is over, you will be able to apply to offer the following new programs:

1. 14.1001–Electrical, Electronics and Communication Engineering. A program that prepares individuals to apply mathematical and scientific principles to the design, development and operational evaluation of electrical, electronic and related communications systems and their components, including electrical power generation systems; and the analysis of problems such as superconductor, wave propagation, energy storage and retrieval, and reception and amplification. In addition, the curriculum should provide updated information on alternative energy.

MICHIGAN CTE PROGRAM STANDARDS

During webcast presentations delivered by OCTP administration in May 2007, it was announced that we reviewed our CTE programs and have selected standards for instructors to follow, effective December 2008. Programs that already have standards, such as automotive (NATEF), will not change. Our most important project for this fall will be to provide professional development and technical assistance to CTE Teachers and CTE Administrators for the implementation of these standards. We intend to offer webinars each month so that schools will be consistently updated on the requirements surrounding the implementation of these standards. Updates will be printed in the OCTP Director’s monthly “Update” newsletter to administrators. At this time, please do not contact industry vendors to purchase new textbooks or resources, until further instructions have been given.

MICHIGAN ENGINEERING INCENTIVE PROGRAM

In her 2007 *State of the State Address*, the Governor Jennifer Granholm addressed the development of a 21st Century Workforce: No Worker Left Behind. ...”And because engineers and technology workers are so important to the Michigan workforce ... we will make zero percent loans available to students in our public universities who pursue engineering and technology degrees.” Information on the NWLB program may be found at: www.michigan.gov/nwlb.

JUNE 2008 GRADUATES, do not forget the **Michigan Engineering Incentive Program**. If you are considering a career in engineering or another high-tech field, then you should take advantage of this program. It is designed to encourage more students to consider these math/science fields by offering a zero percent interest rate and either payment or reimbursement of the federal loan origination fee. To obtain additional details visit: www.michigan.gov/mistudentaid/0,1607,7-128--111860--,00.html.

YES! EXPO 2007 IS COMING!!!

Order your FREE Tickets now for this great event which allows students to explore cool careers in engineering, science, and technology. The Youth Engineering and Science Expo (YES) is scheduled for Thursday, November 8, 2007 at the Ford Field in Detroit, Michigan. In its third year, this event attracts over 15,000 middle and high school students.

For more information and to view photos from 2006 Expo, visit the website: <http://www.yes.mtu.edu>.

MICHIGAN CAREER OUTLOOK THROUGH 2012

It is important for students to be aware of the industry trends so that they can make smart career choices. Go to the website: www.michlmi.org and in the SEARCH box type: Career Outlook Through 2012. This information is useful for career planning and you will be able to see the fastest-growing local occupations, the high-growth occupations for various educational levels, and occupations with the largest number of annual job openings.

TECHNOLOGY SUMMER CAMPS

Each summer, Lake Superior State University, School of Engineering & Technology, sponsors several technology camps for students. The summer camps are ideal for college-bound students; and prior knowledge of robotics or other engineering technology topics is not required. To learn more about the “Women in Technology Camp” and Robotics Camps visit: www.lssu.edu/eng/camps/index.php.

TECHXPLORE 21ST CENTURY APPROACH TO SCIENCE & TECHNOLOGY LEARNING

TechXplore is an innovative online competition and mentoring program dedicated to helping middle and high school students build the science and technology skills needed for workplace success – through partnerships with business and education communities. All teams and individuals who complete the process are recognized. Exemplary teams are honored at a gala awards event in Washington, DC, attended by more than 500 industry executives and government officials. Teachers receive gift certificates toward the purchase of educational products. For registration and competition details, visit: www.techxplore.org.

INDEMAND MAGAZINE

This publication provides an opportunity for students to stay abreast of the careers of tomorrow (high growth industry jobs). To learn about career opportunities, education, and the skills needed in: Advanced Manufacturing, Construction, Energy, Health Care, and Science-Technology-Engineering-Math (STEM), print the InDemand magazine in the PDF version. www.careervoyages.gov/indemandmagazine-main.cfm.

MELIOR AUTOMOTIVE OPPORTUNITY

The Office of Career and Technical Preparation has been in partnership with Melior for the last two years with “Today’s Class” online automotive instruction. They are interested in providing these same modules to remote areas of the state and including community colleges in the partnerships. Please see the flyer attached to this newsletter for more information.

ONLINE VIDEO CLIPS OF FEMALE ROLE MODELS IN TRANSPORTATION AND CONSTRUCTION

Inspire your students with career videos featuring women in male-dominated jobs. Each video explains what the job is like and what it requires, especially if you are female. The “Women in Construction” video features high school students touring construction sites, attending a career fair, and learning about employment possibilities. The “Women in Transportation” video clip showcases women performing traditionally male transportation jobs in areas such as aviation, auto technology, and rail and marine travel. These videos and others are available to view for free. Check out the construction and transportation videos at: http://www.iwitts.com/html/video_clips.html

TRYENGINEERING.ORG

TryEngineering is a resource for students (ages 8-18), parents, teachers, and school counselors. At this site, you can read the backgrounds of several employees working in the engineering field, email questions to an engineer or an undergraduate engineering student today and ask what certain university courses are like, what salaries are paid for certain types of positions, and the direction of a particular field. Also, have fun with many online engineering games to see how comfortable you are with science and math subjects. This is a very informative site for those students considering engineering: www.tryengineering.org.

ADVANCED MANUFACTURING

Technology is what makes manufacturing so versatile. Advanced manufacturing applies cutting edge concepts in electronics, computers, software, and automation to improve production. Whether a student’s interest lies in production, engineering, or designing, experts say there will be plenty of demand in coming years for qualified candidates – girls as well as boys.

A recent study released by the National Association of Manufacturers and the Manufacturing Institute, reports that 81% of American manufacturers say their biggest problem is finding qualified workers.

The Manufacturing Institute recommends that students take math and science courses starting in middle school as manufacturing is technologically driven; in addition computer programming skills should be studied as well.

Go to the following website to view “Cool Stuff Being Made”. There are several videos listed which will take you into the plants to see the manufacturing of carpet, to BMW’s, to masking tape and a whole lot more!

http://blog.nam.org/archives/coolstuffbeingmadecom_weekend_video/lilliput_play_h/

Also view the National Association of Manufacturer’s career page with your students. This site shows the diversity of manufacturing careers: www.gettech.org.

To help students use teamwork to problem solve, visit the Odyssey of the Mind website: www.odysseyofthemind.com

ATech’S AUTOMOTIVE DONATION PROGRAM

ATech, with the assistance of Ford, has donated over \$200,000 of training equipment to both certified and non-certified schools across the country over the last two years. If you don’t have a donation application on file with ATech, submit AS SOON AS POSSIBLE. Download application from their website: www.atechtraining.com.

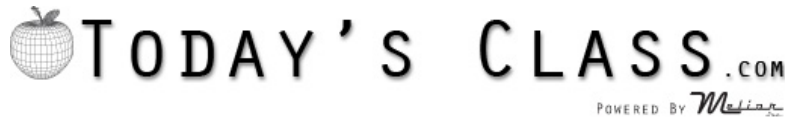
CAREER VIDEOS

If you still have not decided on a career field, don’t worry, you can view over 600 career videos in five categories. Go to: <http://www.jobstvnews.com>. A picture is worth a thousand words – see and hear people at work describing their job, salary, and rewards.

Questions, comments, and/or suggestions regarding this newsletter, should be addressed to Patricia Talbott
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The Office of Career and Technical Preparation complies with all Federal laws and regulations prohibiting discrimination and with all requirements and regulations of the U.S. Department of Education. It is the policy of the Office of Career and Technical Preparation that no person on the basis of race, color, religion, national origin or ancestry, age, gender, height, weight, marital status, or disability shall be subjected to discrimination in any program, service or activity for which it is responsible, or for which it receives financial assistance from the U.S. Department of Education. Contact: Office of Civil Rights Administration Coordinator, Office of Career and Technical Preparation, P.O. Box 30712, Lansing, MI 48909. (517) 373-3373.





MICHIGAN REMOTE SCHOOL STRATEGY PROPOSAL

May 11, 2007

Melior-Delaware, Inc, (“Melior”) would like to fund a pilot program to evaluate the potential for implementing an online automotive technology program for secondary students in remote areas that would not otherwise have access to this content.

Background

Melior currently provides online automotive technology content to over 400 schools. As of May, 2007, over 18,000 students are engaged in over 75,000 online modules. Ninety-one Michigan schools are participating.

Small and remote schools generally do not have the “critical mass” to support automotive career programs. However, some students in these schools have an interest in technical careers and cannot access the material at the secondary level.

Post secondary institutions that have automotive programs have traditionally recruited within their geo-political boundaries. The need to find talented students and respond to the needs of industry have encouraged these institutions to implement new marketing and recruiting programs, i.e., to expand the recruiting base. Recruiting potential students who have had some preparation and/or advanced credit (articulation) increases the efficiency of the educational process.

Melior’s online material (provided at www.todaysclass.com) includes the following characteristics:

- All software is based on Melior servers – there is no need to install or maintain software on users’ (or schools’) computers. Macromedia Flash and Adobe PDF are required and are free downloads.
- A dial-up modem and basic equipment may be sufficient (standards available on request). Toll free support is provided for connections and computer configurations.
- Materials are developed in Macromedia Flash and are interactive (“game like”).
- End-of-Course summaries are provided in printable PDF format, hence no need for books.
- Tutor (instructor) access is provided; technical support is toll free.
- Quizzes and tests are included.

Facilitating Remote Automotive Training and Education

There are several possible models that could be applied to remote areas:

1. ***Student/Melior Guided.*** A remote school may have a student with an interest in automotive technology. If a special studies teacher agrees to permit the student to explore this area, Melior will provide the materials and an automotive technical expert to serve as a tutor. The teacher will be able to monitor the student's progress, quizzes and exams, and can work with the technical expert. The student can email or call the technical expert toll free for assistance. For example, "I need help calculating the current through a parallel circuit using Ohm's Law".
2. ***Student/College Guided.*** Same as #1, except a community college gets involved. In this case, a college automotive instructor serves as the technical expert/tutor and develops a relationship with the student. This may result in the student enrolling in the college after high school graduation. Articulation may be possible in some areas, as the college instructor will have had an opportunity to "guide" the student.
3. ***Student/College Guided with Lab.*** Same as #2, except the community college provides occasional weekend laboratory sessions, whereby students are bussed in. This model is more expensive, but is more complete from an educational point of view.
4. ***College Recruiting/Senior Preparation.*** This is a recruiting model. The college identifies high school seniors who are candidates for a college automotive program. The college would offer a 4-6 month "scholarship" during the senior year that includes free access to www.todaysclass.com modules titled, Circuits and Meters (3 modules). The students would be guided by a college instructor. Advantages include: (1) a connection with a prospective student and (2) the student will enter college prepared with respect to basic electrical technology.

Why is Melior Willing to Provide This Program?

Melior is in its third year of providing online material. The activity in career-based schools has increased rapidly. However, talented individuals exist everywhere and the online format can reach a broader segment of the school age population. It is important to find ways of supporting this "extended" talent. The need goes beyond automotive technology. Melior will launch a pilot program in the area of Health Care in the fall of 2007. The experience gained with the automotive technology area will be helpful in newly developed areas.

Questions can be directed to:

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