

National Resource Center for Materials Technology Education

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Introduction – Edmonds CC

- Established in 1967
- Location: North of Seattle (Lynnwood) within 10 miles of Boeing Everett Campus
- Onsite Learning: ~11,000 Students
- Associate of Science Degree - Engineering, Computer Science, Physics and Atmospheric Sciences
- Associate in Applied Science –Transfer Degree - Materials Science Technology

Recent NSF Program History

- Materials Aspects of Manufacturing Technology Institute (MTI) – at Un. of Washington to train high school teachers and community college instructors in materials science (WA state) 1997-2001
- Enhancement of Materials Technology for Manufacturing (EMTECH) – at Edmonds CC to train high school teachers in materials science (Nationwide) 2001-2003
- Planning Grant – at Edmonds CC to submit National Resource Center proposal 2004-2005

Project Information

Funding: \$1,499,986 over 4 years starting July 2005

Location : Edmonds Community College, Lynnwood, WA

Project PI's

- Mel Cossette, Edmonds CC
- Tom Stoebe, Consultant (retired U. of Washington)
- John Rusin, Consultant (retired Edmonds CC)
- Mike Kenney, ASM International
- Bob Simoneau, Keene State University

Community College Partners

- Cerritos College, Norwalk, CA
- Connecticut College of Technology, Hartford, CT
- Cuyahoga Community College, Cleveland, OH
- Gadsden State Community College, Gadsden, AL
- McHenry Country College, Crystal Lake, IL
- Metropolitan Community Colleges, Kansas City, MO
- South Piedmont Community College, Polkton, NC
- Tidewater Community College, Virginia Beach, VA
- Un. of New Mexico Los Alamos, Los Alamos, NM

Technical College Partners

- Central Washington University, Ellensburg, WA
- Kettering University, Flint, MI
- Wentworth Institute of Technology, Boston, MA

National Resource Center for Materials Technology Education

Goals of the National Resource Center:

1. Develop a set of core competencies to define the materials-related skills a technician needs in today's advanced manufacturing environment
2. Provide faculty with access to curriculum to introduce the competency-related concepts into their manufacturing and engineering technology courses
3. Provide mentoring and professional development for faculty to assist them to teach the basic subjects of materials technology to their students.
4. Provide the communication systems and web-based resources needed to create a community of users to disseminate and sustain the Resource Center activities

Goal 1: Develop core competencies in material technology.

- Implement focus groups of industry leaders that will identify job functions, tasks, required skills and abilities.
- Reviewed at annual conference and by professional societies
- Industry participants to validate standards
- Published and widely disseminated
- Supplemental to other competencies/standards

- Facilitator: Prof. Bob Mott, University of Dayton and Sinclair CC
- Process:
 - Focus groups
 - Lynnwood, WA – August 2005
 - Los Angeles, CA – August 2005
 - Detroit, MI – October 2005
 - Cleveland, OH – November 2005
 - Draft report December 2005
 - Wide distribution for review

Goal 2: Provide faculty with easy and direct access to available teaching materials.

- Collect, review and catalog existing resources
- Develop new resources only as needed to meet core competencies identified in goal 1
- Faculty from partner institutions will review, test, and evaluate curriculum
- Standard templates for testing, design and assessment will be development and implemented.

- Curriculum search:
 - Web search
 - EMTECH collection
 - Partner and other faculty input
 - Publications and conferences
- Curriculum development, testing and evaluation via proposals from partners
- Result: Fully catalogued, cross referenced, peer reviewed data base of modules, courses, demonstrations, laboratories, capstone projects, etc

Goal 3: Provide mentoring and professional development opportunities.

- Mentoring for instructors
 - Industry, professional societies, universities
 - Web based mentoring system to be developed
- Mentoring for colleges
 - Partner colleges
- Workshops and institutes for faculty
 - Variable lengths depending on need
 - ASM Teachers Camp for HS level

- Regional support groups
 - Developed by partner colleges
 - Regular meeting schedule
- Master teacher corps
 - Provide mentoring, support
 - Presentations at regional, national meetings
 - Assist with curriculum review, updating

Goal 4: Develop communication systems and web based resources to create a community of users for dissemination and sustainability.

- Provide annual Proven Practices and Annual Update Conference
 - Proven practices discussions, publications
 - Curriculum training
 - Mentor training
 - Industry feedback
 - Opportunity for communication and networking

Annual Proven Practices and Annual Update Conference

- Held in conjunction with MS&T and NEW annual conferences
- First conference to be held in October 2006

- Establish the Resource Center Website as a repository for materials and information.
 - Developed and sustained in collaboration with ASM International
 - Staff and volunteer support
 - Full curriculum database
 - Collaborative interaction system among participants, staff, partners and collaborators
 - Database tracking system

Resource Centers

NCME, NJCATE, MATEC

Professional Societies

ASM, SME, SAMPE, TMS, ACERS

Education Groups

NSTA, AACC, ITEA

How to Participate

- Join a focus group
- Contribute curriculum
- Become a mentor or master teacher
- Attend the annual conference

Contact Information

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