

**Sessions and Presentations Sponsored by the Technological Literacy
Constituent Committee**

**American Society for Engineering Education
2009 Annual Conference
Austin, Texas
June 22-25, 2009**

Session 0588: Creating an Engineering Course for Non-engineers

Sponsor(s): Technological Literacy Constituent Committee

This hands-on session will help participants to develop a general-education engineering course for non-engineering students. The session will provide an overview of the types of courses that have been offered at various institutions. Key factors in attracting and maintaining the interest of nonengineers will be described. Participants will be able to create a syllabus and learning objectives. Strategies for obtaining institutional curriculum committee approval will be reviewed. Resources for obtaining appropriate instructional materials will be provided. The session leaders are experienced in developing and teaching courses on engineering topics for nonengineers.

Speakers: Kate Disney, Mission College, John Krupczak, Hope College

Session 2388 -- Engineering Courses For Non-Engineers

Sponsor(s): Technological Literacy Constituent Committee

The National Academy of Engineering advocates all Americans know more about engineering and technology. Some engineering departments are beginning to offer courses specifically for non-engineering students. Although common practice among many STEM departments, teaching service courses is a new development for engineering programs. In this session, faculty who have been successful in promoting courses for nonengineers will describe their experiences, including course descriptions and strategies for entering the undergraduate general-education curriculum.

TWO MINORS IN TECHNOLOGICAL LITERACY FOR NONENGINEERS*

Robert Gustafson, The Ohio State University

Bruce Trott, The Ohio State University

**INTEGRATING HISTORICAL TECHNOLOGIES AND THEIR IMPACT ON SOCIETY INTO TODAY'S
ENGINEERING CURRICULUM***

William Loendorf, Eastern Washington University

Terence Geyer, Eastern Washington University

USING MOVIES TO EXPLORE ELEMENTS OF TECHNOLOGICAL LITERACY*

John Blake, Austin Peay State University

TEACHING EMERGING TECHNOLOGIES USING A SOCIOTECHNOLOGICAL DEVELOPMENT MODEL*

Bradley Bishop, United States Naval Academy

Session 2427 - Technological Literacy And K-12 Engineering

Sponsor(s): K-12 & Pre-College Engineering Division; Technological Literacy Constituent Committee

This session focuses on the critical topic of technological literacy for all students. The papers will discuss the role and integration of technological literacy into K-12 engineering and technology education.

**TOWARD A TECHNOLOGICALLY LITERATE SOCIETY: ELEMENTARY-SCHOOL TEACHERS' VIEWS OF THE
NATURE OF ENGINEERING**

Faik Karatas, Purdue University

George Bodner, Purdue University

**INVESTIGATION OF THE SUCCESSFUL EFFORT TO CHANGE EDUCATIONAL CURRICULUM FRAMEWORKS
IN MASSACHUSETTS TO INCLUDE ENGINEERING AND TECHNOLOGY**

Nataliia Perova, Tufts University

Chris Rogers, Tufts University
David Heny Feldman, Tufts University

TECHNOLOGY EDUCATION IN THE UNITED STATES: TEACHERS' BELIEFS AND PRACTICES IN PERSPECTIVE*

Mark Sanders, Virginia Tech
Thomas Sherman, Virginia Tech
Hyuksoo Kwon, Virginia Tech
James Pembrige, Virginia Tech

Session 2588 – What Should Everyone Know about Technology?

Sponsor(s): Technological Literacy Constituent Committee

The National Academy of Engineering recent published: “Changing the Conversation: Messages for Improving Public Understanding of Engineering.” The NAE states that capable and confident participants in our technologically-dependent society must know something about engineering. This session explores the question: what should everyone know about engineering and technology. What does it mean to understand technology? Panelists from who have worked in the area will describe issues surrounding attempts to characterize technological literacy. Audience participation will help to define a research agenda for educators interested in this topic.

PANELISTS:

Billy V. Koen, Professor of Mechanical Engineering, University of Texas,
Author of "Discussion of the Method," (Oxford, 2003). and ASEE Fellow.

John Lienhard, M.D. Anderson Professor of Technology and Culture, Emeritus, University of Houston, Creator of “Engines of Our Ingenuity,” radio program and author of “Inventing Modern,” (Oxford 2003), Member NAE.

Robert J. Gustafson, Ph.D.,P.E., Honda Professor for Engineering Education and Professor, Food, Agricultural and Biological Engineering, and
Director, Engineering Education Innovation Center, Ohio State University.

Mani Mina, High Speed Systems Engineering Laboratory
Director of Minor in Engineering Studies (MES) Program, Iowa State University.

Tarek Shraibati, Professor Department of Manufacturing Systems Engineering and Management, California State University, Northridge

Jameson M. Wetmore, Assistant Professor, Center for Nanotechnology in Society, Arizona State University. Co-author of Technology & Society: Building our Sociotechnical Future (MIT Press, 2007).

Session 2688 -- Engineering And Technology For Everyone

Sponsor(s): Technological Literacy Constituent Committee; Liberal Education Division

All Americans would benefit from knowing more about engineering and technology. As defined by the NAB, technological literacy includes understanding all types of technology developed by engineers, as well as computers and the Internet. This session addresses the issues surrounding engineering and technological topics for nonengineering students.

IMPACT OF ENGINEERING: DESIGNING A CLASS FOR TECHNOLOGICAL LITERACY DISCIPLINES*

Mani Mina, Iowa State University
Ryan M. Gerdes, Iowa State University

INSTRUCTIONAL BENEFITS OF A COURSE MANAGEMENT SYSTEM IN K-12 EDUCATION*

Patricia Carlson, Rose-Hulman Institute of Technology

ENGINEERING COURSES FOR NON-ENGINEERS.*

John Krupczak, Hope College

Session 3653 - Potpourri

Sponsor(s): First-Year Programs Division; Technological Literacy Constituent Committee

This session will present papers spanning a wide range of topics pertaining to first-year engineering programs or students, as well as engineering courses which include nonengineering students.

ENG2: ENGINEERING ENGAGEMENT FOR STUDENT SUCCESS — BUILDING A COMMUNITY FOR FIRST-YEAR FRESHMEN IN THE COLLEGE OF ENGINEERING*

Summer Dann Johnson, Louisiana State University, Baton Rouge

John Scaizo, Louisiana State University, Baton Rouge

Sarah Jones, Louisiana State University, Baton Rouge

Kelly Rusch, Louisiana State University, Baton Rouge

Warren Waggenpack, Louisiana State University, Baton Rouge

ENGAGING FRESHMAN EXPERIENCE: THE KEY TO RETENTION?*

Ronald Welch, University of Texas, Tyler

A MODEL FOR COORDINATION AND MANAGEMENT OF RESOURCES FOR MULTIPLE SECTIONS OF AN ACTIVE-LEARNING-STYLE FRESHMAN COURSE*

Jean Nocito-Gobel, University of New Haven

Amy Thompson, University of New Haven

Michael Collura, University of New Haven

NEW DEVELOPMENTS IN ENGINEERING FOR NONENGINEERS*

John Krupczak, Hope College