Spring 2009 Student Presentations

COMPUTER NETWORK & SYSTEM ADMINISTRATION PROGRAM

Senior Project Presentations

April 30, 2009
All presentations will be in Rekhi G009

Wireless VoIP and Network Simulation
8:00am – 9:25am

Secure Medical Data Exchange and Patient Identification through Biometrics
9:30am – 10:55am

Network Security and Assessment: Grandview Health System
11:00am – 12:25pm

LUNCH – 1 hour

Open Source Security Information Management
1:30pm – 2:55pm

Unified Directory Services and Single Sign-on
3:00pm – 4:00pm

Open Source Inter-Library Services Alternatives for Libraries with Restrictive Budgets
4:05pm – 5:05pm
CONSTRUCTION MANAGEMENT PROGRAM

CMG 4800 Principles of Sustainable Construction

Thursday, April 23, 2009
Time: 11:30 a.m.
Room: 315 EERC
Title: Green Building Design Project
Advisor: Dave Bach

In January 2009, the six students in CMG4800, Principles of Sustainable Construction, contracted with the 7th generation housing cooperative in Lansing, MI to provide conceptual plans for a self-sufficient 4-unit housing complex to be built on an old parking lot site near the Capitol.

The public presentation of this long-awaited green building design will be: April 23, 2009, 11:30 a.m., Room 315 EERC.

This work is based on the best of sustainable design methods such as:

- An innovative building design that takes full advantage of passive solar heating and natural lighting.
- Use of solar energy to provide all electrical power needs and most of the domestic hot water.
- Auxiliary water and space heating provided by creative use of locally available renewable fuels.
- A close-looped potable water system incorporating rainwater collection, grey water reuse, composting and low flush toilets, and on-site tertiary wastewater treatment and purification with EXCESS water provided to the neighboring trailer court.
- Green building materials such as R-20 windows and insulating wall panels made from rice hulls.
- Site renovation using native plant species and recycled hardscape materials.

You don't want to miss this.... And the cookies will be good too.
Dave Bach

CMG 4900 Construction Project Simulation

Wednesday, April 22, 2009
Time: 3:00-5:00 p.m.
Room: G002 Forestry Building
Title: Final Design Build Interview Sessions
Advisor: Mike Drewyor

New proposed UPPCO facility to be built on a 10-acre, city-owned site west of Festival Foods, accessing off Sharon Avenue - 4 firms, each with 30 minute presentations.
Senior Design Presentations:

Thursday, April 23, 2009  
Time: 3:00-4:30 p.m.  
Room: 421 EERC

Title: Dynamic Measurement of Loudspeaker Suspension Components  
Advisor: Dr. Aleksandr Sergeyev  
Sponsor: Electro-Voice  
Team Members: Steven Riemersma, Keith Kinnear, and Mitchell Schuh  
Project Overview: The nonlinear stiffness characteristics of suspension parts contribute significantly to the ultimate performance of a loudspeaker. A new measurement technique is required to accurately capture the stiffness over displacement while varying multiple parameters (peak displacement, temperature, etc.). A setup is proposed that will excite the component in a manner similar to its typical operation.

Title: Vision System for Steel Mill Reheat Furnace  
Advisors: Joel Kimball and Dr. Brian Davis  
Sponsor: ArcelorMittal  
Team Members: Aaron Oaks, Jake Hildebrandt, and Wes Sutton  
Project Overview: Our team leader’s experience in working in a steel mill has led to the identification of problems with the reheat furnace of that and other steel mills throughout the country. Currently, these furnaces use a rudimentary photoelectric eye-based system to track the position of steel bars within the furnace. This tracking system is inherently prone to failure and provides very little usable information even when working properly. The system we are designing and prototyping solves the reliability issues and makes the reheating process much more efficient by using an intelligent, camera-based solution. Instead of photoelectric eyes which only indicate whether a bar has entered the furnace or not, our system takes visual data and provides the operator with the precise location and length of the bars. The system also controls the conveyor rollers independently, allowing the empty portions to remain unpowered to conserve energy.

Title: Ash Hydration System  
Advisor: Joel Kimball  
Sponsor: Georgia Pacific  
Team Members: Mitch Edbauer, Norm Larson  
Project Overview: Students are redesigning an old Ash Hydration system for a coal power plant.
MECHANICAL ENGINEERING TECHNOLOGY PROGRAM

Senior Design Presentations:

**Tuesday, April 21, 2009**
Time: 3:00-4:00 p.m.
Room: 214 EERC
Title: Stirling Engine Generator
Team Members: Eric Ahlem, Seth Kooiker, Josh Rhode, Chris O'Sullivan
Advisor: Sam Coates

**Tuesday, April 21, 2009**
Time: 4:00-5:00 p.m.
Room: 316 EERC
Title: Die Cast Machine Install
Team Members: Neil Dabrowski, Nick Thompson
Advisor: Scott Wagner

**Tuesday, April 21, 2009**
Time: 4:00-5:00 p.m.
Room: 229 EERC
Title: Shallow Drive Outboard
Team Members: Erik Kivela, Thomas Kohlmann, Travis Guenther
Advisor: Dave Wanless

**Thursday, April 30, 2009**
Time: 2:00-3:00 p.m.
Room: 316 EERC
Title: Hydrogen Fuel Cell Demonstration Unit
Team Members: Andrew Dillon, Jeremiah Readle, Richard Savola, Mychal Summers
Advisor: Barbara Lograsso

**MET 4460 Product Design and Development**

**Tuesday, April 21, 2009**
Time: 1:00-2:00 p.m.
Room: 314 EERC
Title: Off-Road Go-Cart
Team Members: Michael Denomme, Joseph Ruohonen, and Troy Tahtinen
Advisor: John Irwin
Sponsor: Pete Manderfield

**Wednesday, April 22, 2009**
Time: 3:00-4:00 p.m.
Room: 330 EERC
Title: Portable Small Engine Load Stand
Team Members: Robert Piaget and Andrew Wiltshire
Advisor: Sam Coates
**Wednesday, April 22, 2009**  
Time: 4:00-5:00 p.m.  
Room: 330 EERC  
Title: CPR Mattress Manufacturing Process  
Team Members: Brian Bowers, Ken Croton, and Matt Osborne  
Advisor: David Wanless  
Sponsor: Smart Trac-CPR Mattress

**Thursday, April 23, 2009**  
Time: 1:00-2:00 p.m.  
Room: 314 EERC  
Title: Sail Plane Winch  
Team Members: Robert Jarema, Thomas Lex, and Thomas Sgrecci  
Advisor: Mark Johnson