

## 2008 ASEE Midwest Section Annual Meeting

### Tours and Workshops Thursday, September 18, 2008

#### Workshops:

- 1:15 – 3:15: Computational Analysis and Programming in MATLAB
- 3:30 – 5:30: Modeling Dynamic Systems Using Simulink

#### Tours:

- 1:45 – 2:45: FlightSafety Simulations or McElroy Manufacturing
- 4:00 – 5:00: Spirit Aerosystems or SulzerChemTech

Attendees may go to the second workshop without going to the first one. The tours are timed so that attendees may do a tour and a workshop, in either order.

Please let us know which tour(s) or workshop(s) you are interested in by emailing Laura Ford ([laura-ford@utulsa.edu](mailto:laura-ford@utulsa.edu)) by Wednesday, Sept. 10, 2008. Include an email address (for workshop software), workshop(s) or tour(s), citizenship, and country of origin if not a US citizen (information requested by the companies).

#### Workshop Brief Descriptions

##### Computational Analysis and Programming in MATLAB

The use of MATLAB(r) as a technical computing language is widespread in advanced engineering curriculum. The goal of this workshop is to introduce first time users in various engineering and sciences disciplines to the MATLAB(r) interface. Participants of the workshop will learn how

- \* To do computational analysis using MATLAB(r)
- \* To write programs to automate data analysis tasks in MATLAB(r)

Additionally, best programming practices for MATLAB(r) and publishing features of MATLAB(r) will be illustrated. While the workshop is geared towards first time MATLAB(r) users, faculty with some MATLAB(r) experience and those looking for a language to use for Freshman Introductory programming courses should also find the workshop useful.

##### Modeling Dynamic Systems Using Simulink

The use of MATLAB(r) as a computational tool is widespread in engineering curriculum, specifically in fields related to modeling and analysis. Simulink is a visual design tool that enables graphical modeling, simulation, design and development of different dynamic systems. As such, incorporating Simulink along with MATLAB(r) into teaching can help further bridge the gap from theory to practice. The goal of this tutorial workshop is to enable participants

- \* To build & simulate models for dynamic systems using Simulink
- \* To use Simulink models in teaching

It is expected that faculty focused on teaching dynamic systems in various engineering disciplines should benefit from this workshop.

## **Tour Brief Descriptions**

**FlightSafety** designs and manufactures the world's most sophisticated simulators, with the most advanced features. From a Cessna Caravan to a Boeing 737, from an Osprey V-22 to a C-5 transport, they design, manufacture and support the widest possible range of training equipment, including computer based trainers, flat panel trainers and Level C/D full flight simulators.

**McElroy Manufacturing Inc.** (MMI) not only designs, manufactures and markets the industry's most complete line of fusion equipment, it also sets the worldwide standard for fintube machines. Furthermore, MMI has an extensive history in design and has engineered a wide array of custom machines. This tour will cover the machining and assembly facilities.

In Tulsa, **Spirit Aerosystems** fabricates Boeing 737, 747, 777 and the 787 composite and metallic wing components as well as control surfaces and floor beams for the 777. The work is done primarily in support of commercial aircraft and an extensive variety of military programs. The capabilities of the AeroStructures operation include advanced composite technology, manufacturing and assembly integration. From their base in Tulsa, they provide world-class structures and service, primarily for Boeing aircraft, for customers across the globe.

**Sulzer Chemtech** sets standards in the field of mass transfer and static mixing with its advanced and economical solutions. They offer a full range of column internals with trays, structured packing, and random packing embedded in column simulation, process design, basic engineering and field services. We will see the distributor test stand and the shops where they make distillation Trays, structured packings, liquid distributors, knitted mist eliminators and in-line mixers.

## **Extra information:**

Workshops: MathWorks will need your email address so they can help you load the software onto your laptop computer. Please bring your laptop to the workshop.

Tours: Please wear clothing appropriate to a plant tour: long pants and sensible, flat, closed-toe shoes. Bring a photo ID.