

SOCIETY of MANUFACTURING ENGINEERS



Special Edition

TORONTO CHAPTER 26

AUGUST 2000

Web Site: <http://www.sme-toronto-26.org>

Attention!! All Manufacturing Professionals:

“The Potential of Mechatronics” Series is About To

The Society of Manufacturing Engineers, Toronto Chapter 26, and Ryerson Polytechnical University are presenting a year-long series titled “The Potential of Mechatronics.”

To be given jointly, this fantastic, 10-part series starting September 20, 2000, gives companies and individuals involved in any kind of manufacturing the opportunity to learn how the fusion of the latest advances in manufacturing systems, such as sensors, control systems, motion devices and computer design and analysis systems, can increase your profit, efficiency and competitiveness.

Mechatronics is the extraordinary potential made possible by recent advances in several areas: Design (CAD, CAM, CAE), motion devices (electrical, hydraulic, pneumatic), sensors (position, rate, density, temperature, pressure, visual, etc.), and control (controllers, ladder logic, computers, and communication).

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Note discount offer for sign up prior to September 1, 2000 See page 4.

If you wish more information about this series, or need other information, please call Pierre Perron at 416-944-9264 or email pierre_perron@yahoo.com Please do not phone after 10 pm EDT.

The course will be held at Ryerson Polytechnical University unless the scheduled activity is a plant visit. The web site, address above, and monthly Bulletins from the Chapter will give details.

Message from the Chair

Mechatronics Crucial to Your Success

So crucial to modern manufacturing, knowledge of Mechatronics systems and their potential is a must for all today.

SME Toronto Chapter 26 and Ryerson Polytechnical University are making available to you—for a very advantageous price—this series of lectures and plant visits. These will put you in touch with experts in the different specialties, specialties which are crucial to forward-looking planning and participation in modern day manufacturing.

These lectures and plant tours cover the various contributing fields that have experienced rapid development over the last few years. The plant tours will focus on actual examples of how the application of Mechatronic technologies has been handled.

Do not get left behind!

Sign up today so you can hold your own in these rapidly evolving areas of knowledge.

Take advantage of the early sign-up discount if you can.

But do not miss out on the fabulous opportunity that we have planned for you!

□

heintzg@attglobal.net

Executive Meetings

Upcoming Schedule: all Wednesdays at 6:30 pm
September 6 October 18
November 8 December 13

At:

AFV Multimedia
233 Evans Avenue
Phone: 416-239-2811

Interested parties are welcome and encouraged to join executive members at executive meetings. For additional information on next meeting phone 416-467-8298 or e-mail: heintzg@attglobal.net or Ken-Dante@msn.com.

Mechatronics Committee

Note Meeting: Wednesday September 13, 2000
7:00 pm at 28 Killdeer Cres, phone 416-467-8298

NOTE: Bulletin copy deadline:
September (next) Issue August 10!!

More Information

To apply, fill out the Application Form, p4, and mail to: Pierre Perron, 80 St. Clair Ave. E, Apt 1706, Toronto, Ont., M4T 1N6, with your cheque. More information at the SME website at <http://www.sme-toronto-26.org/>

Mechatronics Topics & Schedule

Wednesday September 20. Introduction. Goals, Structure and Outcomes, Examples, Understanding Change.

Wednesday October 11. Plant Tour Physical Illustration of All Aspects of Mechatronics. Bob Farhni, Baldor Motor and Drives.

Wednesday November 1. Design Design - CAD / CAM / CAE, simulation and visualization.

Wednesday December 6 Sensors What can be Measured, Sources of Error, Accuracy. Jim Pierson, Pierson & Associates.

Wednesday January 17. Robotics Analysis of a robot as a Mechatronics device and building block.

Wednesday, February 7 Motion Devices Motion devices - Motors, Pistons, Actuators, and Solenoids. Chris Kalemba, Festo.

Wednesday, March 7. Control Systems Control Systems - Controllers, Computers and Networking.

Wednesday, April 4. Implementation Team Work, Project Management, Goal Setting. Pierre Perron, Team building and project planning implementation Consultant.

Wednesday, May 9. Applications Examples - Costs, Business Case, Justification, Management Concerns. Robert Hope, R. B. Hope Industrial Ltd.

Wednesday, June 6. Summary Summary - Panel Discussion: The Future.

Location and Times

The course will be held at Ryerson University in downtown Toronto. A light supper will be offered at 6:00 pm and the session will start at 7:00 pm. We will usually finish by 10:00 pm. Of course plant tours will have different timing.

Cost

The price includes a light supper, course binder, and whatever printed material is supplied by the speakers.

\$450 for SME members, \$550 for nonmember (includes SME membership). Discount for registration before September 1: subtract \$50 per application. * Student members: nominal cost of \$95 for the entire course (students are not eligible for the early sign-up discount).

* Membership enquiries please phone 416-267-2102

EXECUTIVE LIST

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Why Mechatronics?

The complete article, along with others, and speaker and sponsor information, can be found on the chapter web site at <http://www.sme-toronto-26.org/>

Why Mechatronics? Because it meets management's concerns!

In the April 22 issue of The Economist an article on a new Pirelli tire plant outlined the following savings:

Lead time down from 6 days to 72 minutes; huge reduction in Work In Progress inventory (over 90%); process is continuous so material is not heated - cooled - reheated giving higher quality tires; labour productivity 80% improvement.

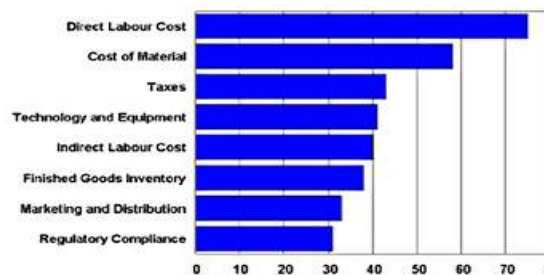
Space is reduced to only 350 square meters (2 city lots - tire plant used to be millions of square feet); capital 25% reduction.

Fast change over (change the mold - all the rest is soft tooling); short lead time and fast change over

give a huge reduction in finished goods (over 90%).

This was accomplished with a new tire mold and lots of Mechatronics. The whole plant is run by a network of computers. All materials are fed continuously from delivery points around the process which is controlled by computers. Robots

handle the material and cut it off precisely as required for each tire. Sensors are everywhere to measure speed, thickness, temperature, pressure etc. Because it is computer controlled it is networked to the customer order system further reducing lead time.



Percent of companies ranking each expense among their top 5 priorities

The 1998 - 2000 Management Issues Survey prepared by the Alliance of

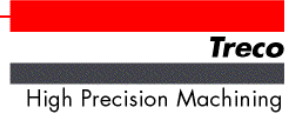
Manufacturers and Exporters has several interesting charts. One highlights management's key priorities for control. Compare these factors to the

(continued on Chapter 26 web site...)

Many Thanks to our BULLETIN PUBLICATION and WEB SITE SPONSORS:



Information and links at: <http://www.sme-toronto-26.org/>



MECHATRONICS SERIES 2000-2001

Philosophy behind this course:

"A profit potential exists when you understand what is easy today and was impossible a few years ago." Robert Hope - Member SME Chapter 26. SME's goal is to assist our members and sponsors to be in a position to exploit available technology in a timely fashion. However, Mechatronics potential comes from the fusion of a group of technologies. Therefore the best way to explore the potential of Mechatronics is by reviewing successful Mechatronic projects. This will be done with a series of case studies and plant tours. Four rapidly evolving underlying technologies are key to understanding Mechatronics. For this reason 4 evenings will be

devoted to exploring the changes in these specific fundamental areas. A brief look at these technologies today vs. 30 years ago drives this point home. Their cost is plummeting: their capability and control is sky rocketing.

Outcomes

The participant will understand the potential of Mechatronics. They will be in a better position to set objectives for Mechatronic projects. They will be able to buy and manage Mechatronic projects. They will be able to assess proposals for Mechatronic systems and will be better team members on Mechatronic projects.

Reminder! Sign up now to get the discount



REGISTRATION FORM - MECHATRONICS SERIES 2000-2001

Please keep a copy for your records. Please photocopy for additional registrations.

DATE: _____
NAME: _____
TITLE: _____
COMPANY: _____
ADDRESS: _____
CITY: _____
PHONE, HOME: _____ OFFICE: _____
FAX: _____ E-MAIL: _____

SME Member \$450 Non-member \$550 * Student Members \$95 Amount Enclosed: \$ _____
(subtract \$50 if you are registering before September 1, 2000. Does not apply to students.)

Detach and send with cheque or money order made out to SME Toronto Chapter 26 Mechatronics, to:
Pierre Perron, 80 St. Clair Avenue East, Apt 1706, Toronto, Ontario, M4T 1N6

* Membership enquiries please phone 416-267-2102