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**American
Iron and Steel
Institute**

Organizing Committee

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- Devbrat Dutta**
Essar Algoma
- Adelmo Monaco**
ArcelorMittal Dofasco
- Darcy Palmer**
U. S. Steel Canada
- Joe Poveromo**
Raw Materials &
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- Shawn Tilbury**
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- Ken Coley** *(Secretary)*
McMaster University

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24TH BLAST FURNACE IRONMAKING COURSE

May 8 - 13, 2016



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Course Objectives

The blast furnace has been and will remain the "centrepiece" of integrated facilities in the steel industry. Present day Ironmaking technology has evolved over many years through innovations in raw materials preparation, blast furnace design and blast furnace practice. Improvements in blast furnace operation usually have significant impact on the well-being of the company.

The blast furnace and its ancillary facilities are very complex and dynamic systems. This course is designed to present "state-of-the-art" knowledge of the systems

2016 Lectures

Principles, Design and Raw Materials

Introduction to Iron Making
Ken Coley

McMaster University

Historical Development and Principles of the Iron Blast Furnace

John Ricketts
ArcelorMittal USA

Blast Furnace Reactions
Bob Nightingale

University of Wollongong/
Retired from Bluescope Steel

Environment Issues in Blast Furnace Ironmaking
Frank W. Harrison

U. S. Steel Canada

Fundamental Principles Applied to Blast Furnace Safety

Fred Rorick
Rorick Inc.

Blast Furnace Energy Balance and Recovery: Rules of Thumb

John Busser
Hatch

Blast Furnace Design I
Dave Berdusco

Paul Wurth Inc.

Blast Furnace Design II
Peter Martin

Primetals Technologies

Ironmaking Refractories
Floris van Laar

Allied Mineral Technical
Services, Inc.

Iron-Bearing Burden Materials

Marcelo Andrade
ArcelorMittal USA

Blast Furnace Control - Measurement Data and Strategy

Bob Nightingale
University of Wollongong/
Retired from Bluescope Steel

Maintenance Reliability Strategies in an Ironmaking Facility

Johan van Ikelen
van Ikelen Blast
Furnace Consultant

to operators, researchers and suppliers of refractories, raw materials and equipment to the industry. The course content is continuously updated by the expert lecturers.

In addition to the lectures, there is a Blast Furnace Game, a Case Study related to Operations and at the end of the Course, an optional Plant Tour. Lecture notes will be distributed at the beginning of the course.

The Organizing Committee reserves the right to modify course material or to substitute lecturers without notice.

Operations

Coke Production for Blast Furnace Ironmaking

Hope Huntington
Clark Laboratories LLC

Day-to-Day Blast Furnace Operation
Art Cheng

Cheng Technical
Services LLC

Challenging Blast Furnace Operations

Fred Rorick
Rorick Inc.

Burden Distribution and Aerodynamics

Steve Yaniga
U. S. Steel

Ironmaking/Steelmaking Interface

Mike Price
ArcelorMittal Dofasco

Fuel Injection in the Blast Furnace

Donald Zuke
ArcelorMittal Steel USA

The Science & Technology of Blast Furnace Slag

John D'Alessio
U. S. Steel Canada

Casthouse Practice and Blast Furnace Casthouse Rebuild

Barry Hyde
Hatch

Ironmaking in Western Europe

Hans-Bodo Lungen
Steel Institute VDEh

Chinese Blast Furnace Practice

Dennis Lu
ArcelorMittal USA

Japanese Blast Furnace Practice

Taihei Nouchi
JFE Steel Corporation

Future Trends in Ironmaking

Joe Poveromo
Raw Materials & Ironmaking
Global Consulting

Blast Furnace Modelling and Visualization

Chenn Zhou
Purdue University Calumet

Optional Lecture

Introduction to Ironmaking
Optional, Sunday Evening



Course Information:

There is an enrollment limit of 100 registrants. The course fee is **\$1,900.00 CDN**. This includes welcome reception Sunday, May 8, lecture notes, lunches, coffee breaks, banquet Wednesday, May 11 and a related shirt. To register for the course complete and return the attached registration form with payment details. Alternatively, you can register online at www.eng.mcmaster.ca/ecommmech/event/ironmaking. Receipt of payment is the only guarantee of registration.

On-Site Course Registration

Sunday, May 8 from 4:00 p.m. to 7:00 p.m. at the main lobby of Les Prince Hall (Sterling Street access). Monday, May 9, from 8:00 a.m. to 9:15 a.m. at the registration desk, outside lecture room at the Michael G. DeGroot Centre for Learning & Discovery (MDCL) building.

Accommodation

To promote interaction among registrants and lecturers, we strongly recommend accommodation in residence at the rate of **\$600.00 CDN**. Accommodation fee includes 5 breakfasts and 2 dinners. Extra nights are available at **CDN \$90.00 + 13% taxes/night**.

On site accommodation registration will be Sunday May 8 from 4:00 p.m. to 7 p.m. at the main lobby of Les Prince Hall (Sterling street access), but for early and late arrivals a front desk is open 24/7 in the main lobby of the Commons building. Daily maid service is provided. Please note there is no wake-up service available.

Reception – Sunday, May 8

A Welcome Reception will be held from 7 - 9 p.m. at the The University Club of McMaster. Registrants are invited to meet lecturers, members of the Organizing Committee, and fellow participants.

Banquet – Wednesday, May 11

A banquet is included in the course registration at the Burlington Golf & Country Club. (Business casual attire, no jeans allowed.)

Game

Monday, Tuesday and Thursday evening in the McMaster University Student Centre (MUSC), CIBC Hall. This is an excellent opportunity to meet and interact with colleagues from all over the world. Delegates found this the highlight of the course, and enthusiastic participation is expected.

Optional Plant Tour – Friday May 13

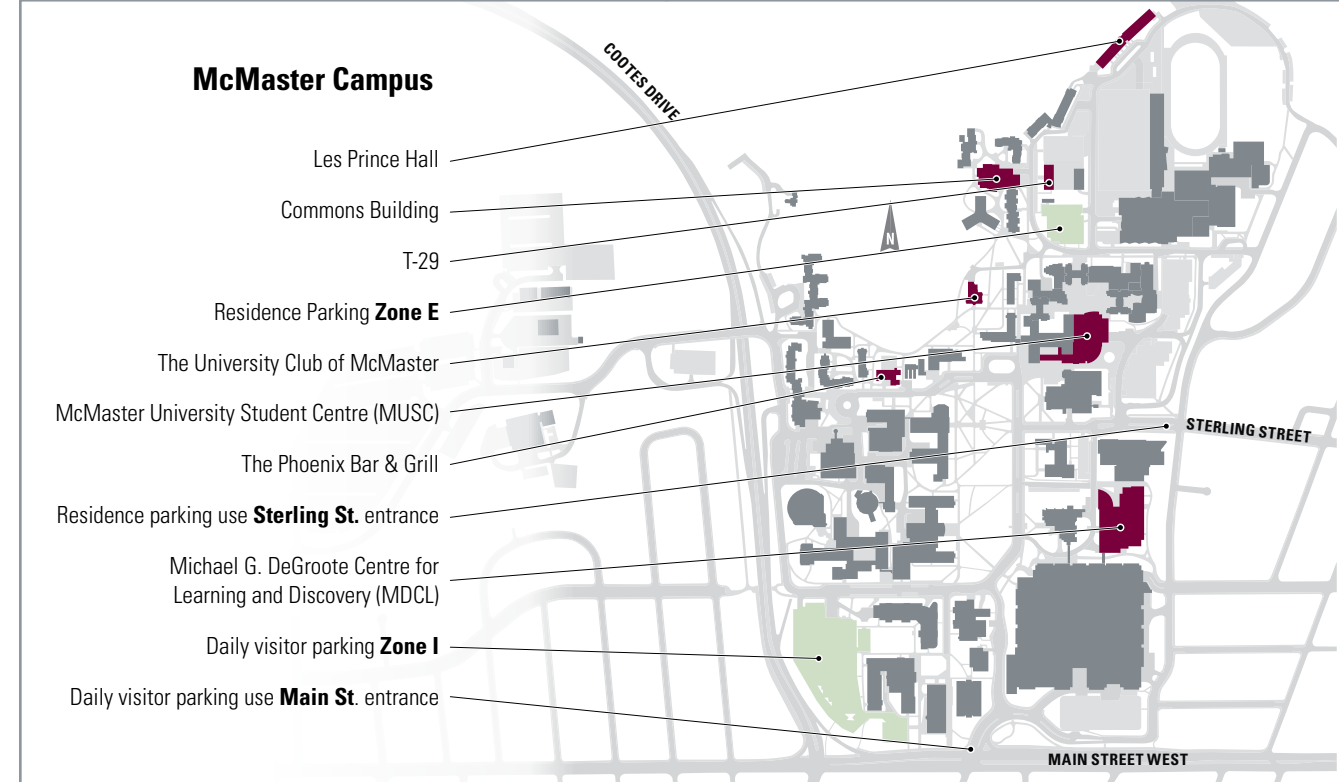
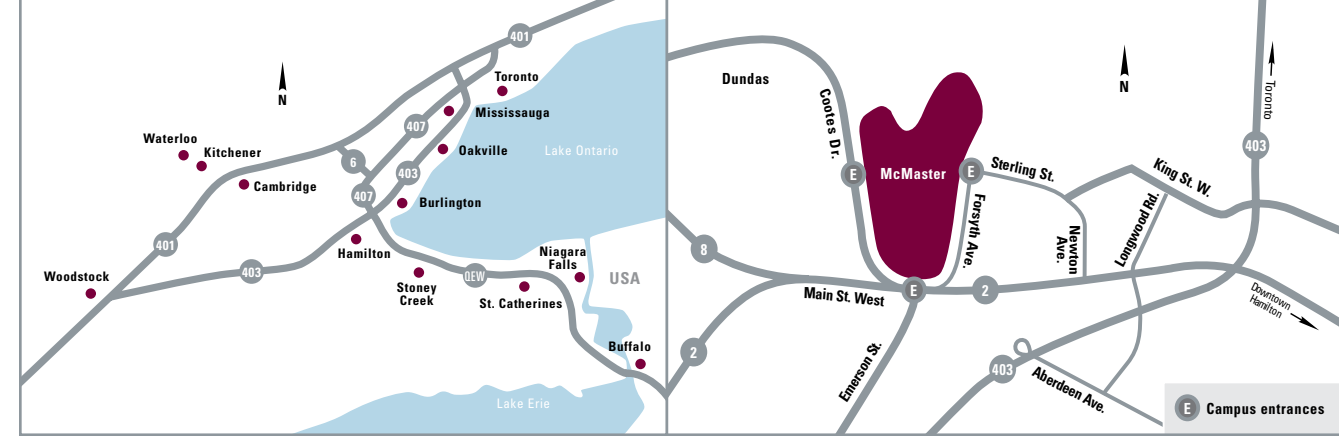
ArcelorMittal Dofasco Tour

Bus will leave Les Prince Hall at 1:30 to approximately 4:30 p.m. Tour will be limited to 40 registrants on a first come, first served basis at a cost of \$40 CDN.

Tour of the ArcelorMittal Hamilton Iron Making Facilities. No short sleeves shirts, short pants or open shoes are allowed. Hard hats and safety glasses will be provided.

Cancellation Policy

Cancellation after April 19, 2016 Refund 50%; there will be no refunds after May 1, 2016. Substitutions can be made.



Travel Information:

Location: Hamilton is situated midway between Toronto and Niagara Falls. McMaster University is located in the west end of the city.

Getting Here: The nearest large airport is Pearson International in Toronto. Frequent limousine or bus service is available and it takes about one hour.

There are also flights from Buffalo NY which is approximately 120 km from Hamilton.

Parking Fees: Residents and non-resident attendees will be charged \$72.00 if purchased at course registration or the course registration desk. McMaster University Parking fee: \$20.00/per day.