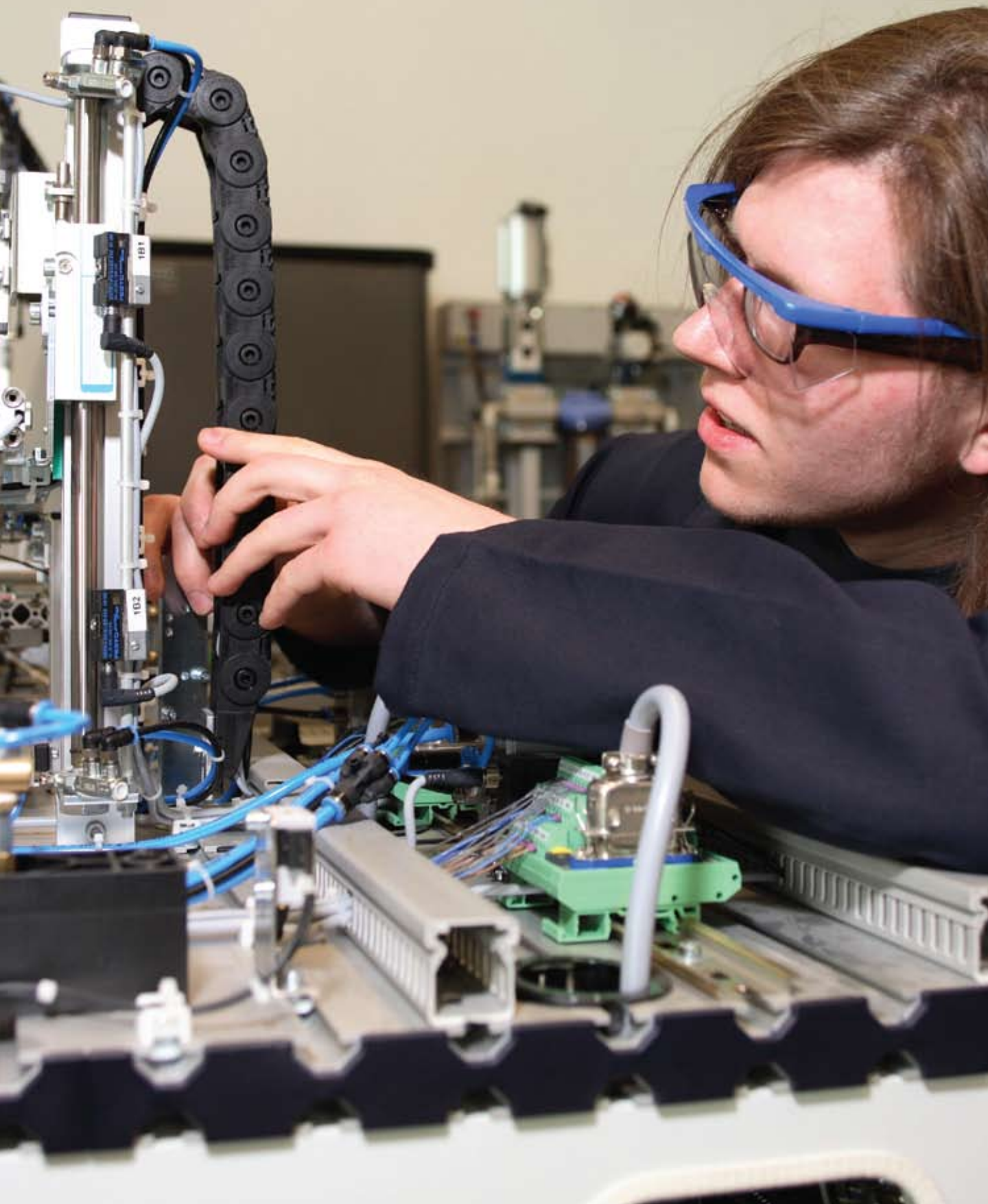




NAIT SHELL
MANUFACTURING CENTRE

MANUFACTURING SOLUTIONS





REAL-WORLD SOLUTIONS FROM INNOVATIVE PEOPLE

NAIT Shell Manufacturing Centre

Our innovative facility, believed to be the first of its kind in Canada, offers a unique combination:

- **Manufacturing Solutions** - a testing ground for the commercialization of technology through research and development, and
- **Productivity Enhancement Services** - specialized training in business leadership and management.

The Centre provides industry with exposure to leading edge manufacturing processes and ideas, and the services and support to enable these clients to apply them to their own products and environments. The Centre's focus is on productivity gains made available through process innovation and advanced technologies such as rapid prototyping, laser cutting, welding robotics and radio frequency identification devices.

Responding to Industry Needs

The Shell Manufacturing Centre was developed in response to requests from Alberta's manufacturing industry for ways to reduce operational costs, improve productivity and enhance competitiveness. The most acute need is in the metal fabrication industries, vital partners in oil and gas related production in Alberta. As a result, many of the Centre's labs and much of the equipment are designed specifically for that sector.

Though Alberta has a strong manufacturing sector, it trails other provinces in annual growth of both labour and capital productivity. Advanced technology can provide solutions to reverse that trend and address Alberta's chronic labour shortages.

At the NAIT Shell Manufacturing Centre, we not only provide technology training for the next generation of skilled workers and their managers, we also offer lab facilities and specialized support for developing and testing new technologies. Located at NAIT's main campus in Edmonton, the Centre offers a wide variety of resources under one roof.



The \$14.6 million NAIT Shell Manufacturing Centre was officially opened on November 29, 2007. Attending the celebration were (from left): Sid Fontoura, graduate of NAIT's Project Leadership and Management certificate programs; Dr. Sam Shaw, NAIT President & CEO; Rona Ambrose, Minister of Western Economic Diversification Canada; and Brian Staub, Executive Vice President - Oil Sands, Shell Canada.

CUSTOMIZED TRAINING FOR BUSINESS & INDUSTRY

Our services can be customized to meet your company's specific needs. Please contact NAIT Shell Manufacturing Centre.

Phone: 780.471.7500
Cell: 780.966.9852
Email: maved@nait.ca



The Centre is a catalyst in bridging the gap between the demands of industry and the supply of skilled workers in our growing economy. With each new graduating student, the future of Canada's manufacturing outlook is being built and positioned for success in the global market."

Rona Ambrose, Minister of Western Economic Diversification Canada

MANUFACTURING SOLUTIONS TO FIT GROWING INDUSTRIES

A wide range of manufacturing businesses seeking productivity improvements can benefit from NAIT's Manufacturing Solutions services. If your business is looking to cut costs through process innovation or increase profitability by improving or developing new technological capabilities, talk to us. You can book our specialized facilities or partner with us on customized training and support for your applied research and product development.

The dedicated labs, state-of-the-art equipment and supportive environment for research and development available at the Shell Manufacturing Centre include:

Nine labs specializing in the following:

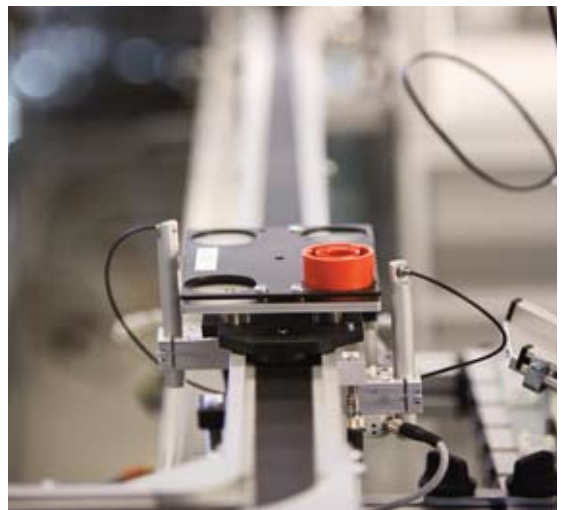
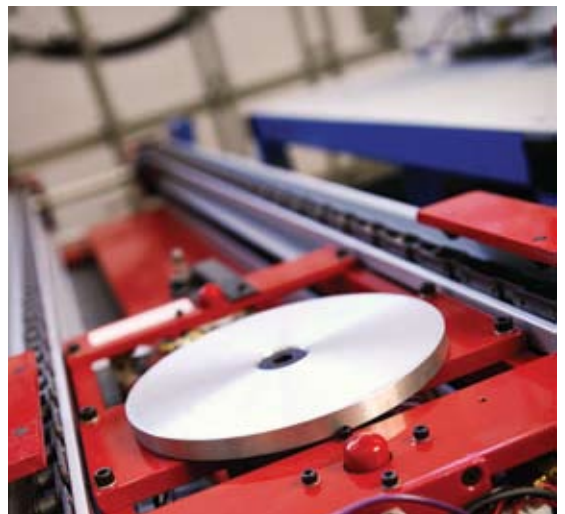
- manufacturing operations, including rapid prototyping, robotic welding and 3-D laser cutting
- computer integrated manufacturing
- Radio Frequency Identification (RFID)
- CNC machining
- mechanical computer assisted design and drafting (CADD)
- advanced hydraulics and pneumatics
- metrology/inspection
- advanced computer applications, including ERP software solutions
- plastics processing
- programmable logic control.

Leading edge software including:

- the latest in Microsoft Business Solutions software
- Matrikon software that allows for real-time monitoring of equipment, process performance, down time and other system operations.

High-tech classroom and meeting facilities, all available for external bookings:

- three "smart" classrooms wired for data projection, network access, Voice over Internet Protocol and other technologies
- 120-person lecture hall
- 20-person meeting room.



Vision Statement:

"To be the world-class, authoritative centre for practical manufacturing education and the comprehensive provider of productivity solutions enabling Alberta's manufacturers to be globally competitive."



Metrology and
Inspection Lab



Advanced
Manufacturing
Lab



Computer
Labs

Computer Integrated
Manufacturing Lab



A CENTRE OF EXCELLENCE

Computer Integrated Manufacturing Lab

- CIM systems
- rapid prototyping
- fluid processing
- robotics
- CNC vision-based process control

Plastics Laboratory

- industrial scale extrusion
- injection molding
- blow-molding

Advanced Manufacturing Lab

- CNC lathe and mill
- robotic welder
- 3D laser cutter
- RFID

Computer Labs (3)

- business system software
- process monitoring software
- computer assisted design and drafting

Metrology and Inspection Lab

- testing
- calibration

Hydraulics and Pneumatics Lab

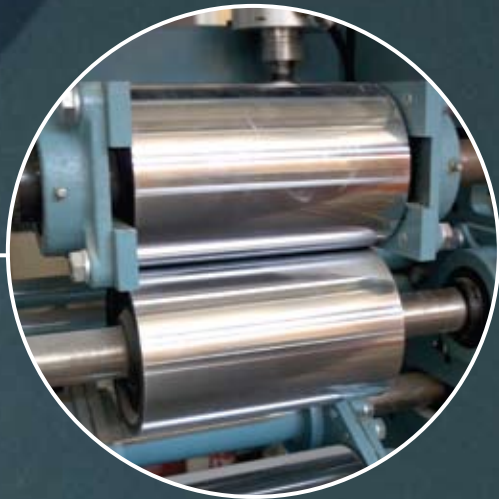
Programmable Logic Controller Lab:

- 10 PLC controlled pneumatic work stations

Smart classrooms (3):

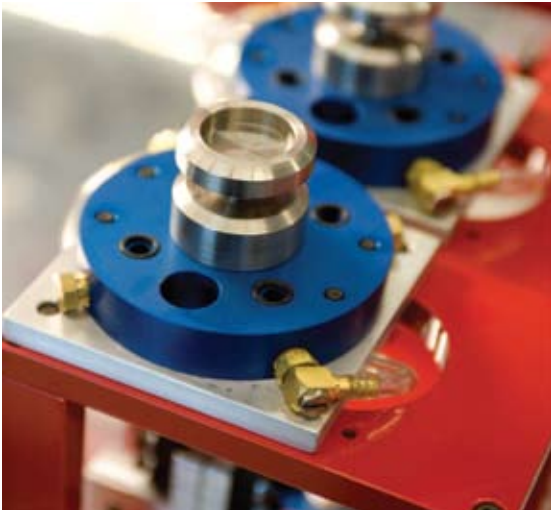
- high speed internet
- multimedia capable

Plastics
Laboratory



RFID





NAIT EXPERTISE

Our instructors and staff are the greatest resource the Centre has to offer. They can offer unbiased, vendor-neutral solutions and work with you to develop the new products or processes you need for your growing business.

Our clients appreciate our industry-driven focus and benefit from our willingness to both teach and learn. They rely on us for our ability to tackle complex, multi-disciplinary challenges and meet varied needs.

Your employees, or NAIT students in specialized programs, can participate in the testing of your discoveries in our on-site, mini-manufacturing labs.

Students in the following programs regularly use the Centre for hands-on training and applied research:

- Mechanical Engineering Technology
- Electronics Engineering Technology
- Bachelor of Applied Information Systems Technology
- Bachelor of Technology in Technology Management

PRACTICAL APPLICATIONS

The Centre facilitates manufacturing applications that are as diverse as our clients' needs. Some examples include:

- development of prototype designs for specialized oil field equipment
- application of robotics to improve quality and lower labour content
- Radio Frequency Identification tagging to track files
- use of our metrology and inspection labs to meet testing and calibration needs
- use of 3-D printing for design and rapid prototyping of biomedical devices
- development of environmentally-friendly engineered materials

Organizations outside the manufacturing field also see practical applications for the centre's labs and equipment. For example, hospitals, laboratories and police services can learn to adapt RFID technology to their own unique needs, such as sorting, storing and retrieving specimens, or tracking and locating valuable assets.

"We're really excited about the prototyping machine at NAIT. It's an invaluable tool to assist us in manufacturing parts we normally couldn't get at source or receive in a timely manner."

Stephen Friend, Biomedical Technologist,
Capital Health





"Our relationship with NAIT has been of great benefit to both our employees and the company. The Project Leadership Program enhanced the leadership and management skills of our management and front line supervisors. NAIT's ability to organize a one-day workshop around our schedule was effective and appreciated. We will continue to use and recommend NAIT's services."

Ken Gallagher, President, Metalboss Tech. Inc.

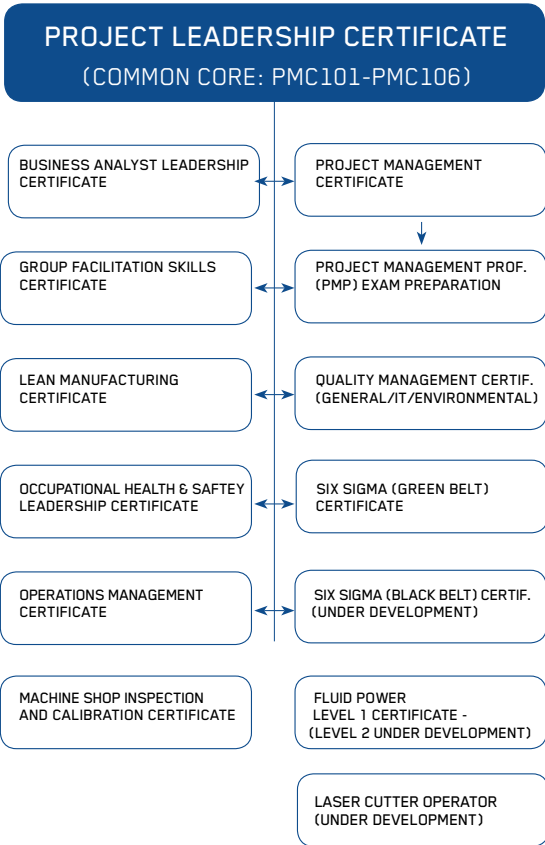
PRODUCTIVITY ENHANCEMENT SERVICES

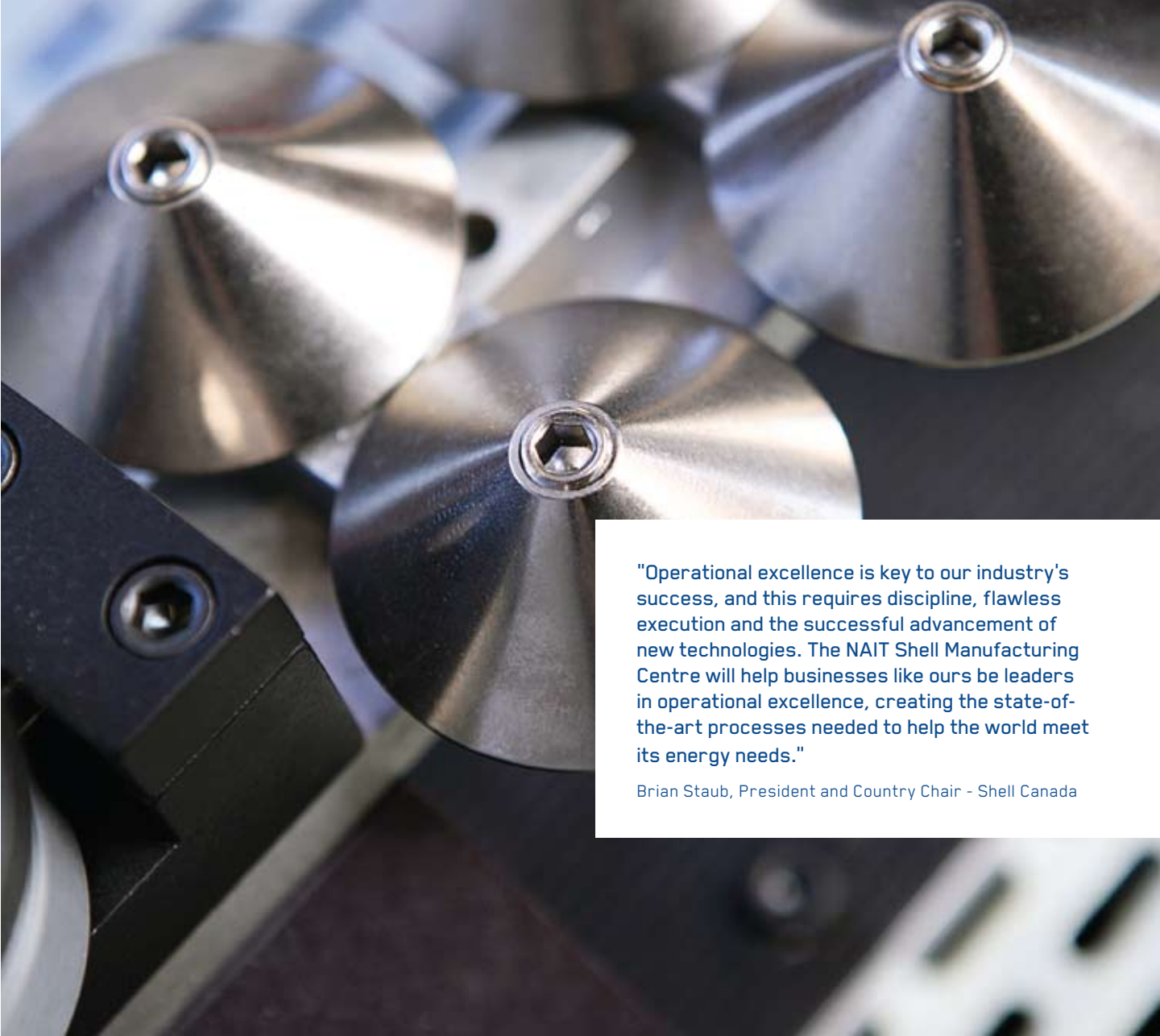
The NAIT Shell Manufacturing Centre is home to a range of courses designed to assist business and industry in becoming more effective and efficient in the global economy. Participants gain the skills to:

- provide project leadership
- plan and roll out projects
- form and maintain teams
- plan and conduct effective meetings
- identify and manage conflict
- improve the bottom line.

These certificate programs are offered in convenient modules for part-time study. In addition, NAIT can customize any offering to meet your company's specific needs.

The chart below shows the range of courses available, under the core umbrella of the Project Leadership certificate. Course descriptions can be found in the Productivity Enhancement Services brochure or on the website at www.nait.ca/nsmc





"Operational excellence is key to our industry's success, and this requires discipline, flawless execution and the successful advancement of new technologies. The NAIT Shell Manufacturing Centre will help businesses like ours be leaders in operational excellence, creating the state-of-the-art processes needed to help the world meet its energy needs."

Brian Staub, President and Country Chair - Shell Canada

PARTNERS IN PROGRESS

NAIT gratefully acknowledges the contributions of the following partners and donors who helped to make the NAIT Shell Manufacturing Centre a reality:



Microsoft



Alberta



Western Economic
Diversification Canada

Diversification de l'économie
de l'Ouest Canada

Canada

Contact us to discuss how we can help
your business:

Manufacturing Solutions

Mave Dhariwal, Operations Manager

NAIT Shell Manufacturing Centre

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Email: maved@nait.ca

www.nait.ca/nsmc

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