

## Mechanical Engineering – Marysville B Room

### Educational Apparatus

- 8:30 a.m. Harmonograph (**I. McWilliams, C. Smith, B. Uddin**)
- 9:00 a.m. Tug of War (**M. Alghamdi, J. Bell, N. Johnson**)
- 9:30 a.m. Pulley Chairs (**M. Alkatib, M. Gilmore, R. Rahman**)

10:00 a.m. Break

### Bio-Engineering Equipment

- 10:15 a.m. Shrinking Cylindrical Drums While Achieving a “Large” Sound (**S. Alnamlah, D. Law, J. Triggs**)
- 10:45 a.m. Optimizing Transmission for Human-Powered Exercise Vehicle (**G. Getson, S. Mustafa, L. Soe**)
- 11:15 a.m. Gliding Transfer Board (**C. Farnham, T. Le, S. MacDonald**)
- 11:45 a.m. Piano Assist Device (**J. Conley, O. Kalu, M. Khan**)

12:15 p.m. Lunch

### Mechanical Machines and Devices

- 1:15 p.m. Brush Manufacture (**J. McPhee, A. Palghat**)
- 1:45 p.m. Knurling Machine (**A. Alzahrani, C. Baxter, P. Mortimer**)
- 2:15 p.m. Lead Handling System for Northside Pistol Range (**N. Daigle, A. Marquis, N. Thibodeau**)

2:45 p.m. Break

## Mechanical Engineering – Marysville B Room

### Laboratory and Process Equipment

- 3:00 p.m. TRS Golf Device for Above Elbow Amputees (**L.Pupek, T. Scott**)
- 3:30 p.m. Design of a Stewart Platform (**B. Howland, M. McLean, J. Nesbitt**)
- 4:00 p.m. Design of Laser Cutting Machine (**A. Dukuze, K.Sargent, T. Thibodeau**)
- 4:30 p.m. Design of an Optimal Wort Cooler (**E. Chouhab, M. Falkjar, A. Martin**)

## Mechanical Engineering – Devon Room

### Fluid Flow and Aerodynamics

- 1:15 p.m. Design of a Wind Farm Near Mt Carleton (**A. Tees, B. Torunski, N. Verhoeven**)
- 1:45 p.m. Design of Fairings for an Underwater Robot (**W. Chen, J. Nabuurs, J. Taylor**)
- 2:15 p.m. Design of a Long Duration Unmanned Air Vehicle (**M. Nwokotubo, A. Otuteye, J. White**)

#### Clients:

Science East  
Bill Wallace  
Stan Cassidy Rehab Centre  
Los Cabos Drumsticks  
Northside Pistol Range  
TRS Inc  
Rickey Dubay  
Andy Simoneau  
Joe Hall  
Andrew Gerber  
Tiger Jeans

#### Industrial

Co-Mentors:  
J. Gilliss  
S. Bartlett  
C. Pothier  
B. Coles  
M. Lambert  
R. Hoadley  
E. Biden  
Academic  
Co-Mentors:  
A. Gerber  
J. Hall

#### Academic

Co-Mentors:  
P. Garland  
M. Afzal  
G. Saha  
A. Simoneau  
Y. Losier  
E. Scheme  
M. Mohammadi  
K. Kiani  
G. Holloway  
T. Jeans  
R. Dubay

## Geological Engineering – Marysville A Room

- 1:15 p.m. Analytically Increasing Confidence in the Plymouth Deposit's Current Resource Estimate and the Design of an Exploration Program to Evaluate Related Mineral Deposits (**C. Arsenault, A. Black, B. Churchill, T. Young**)
- 1:45 p.m. Plymouth Deposit Ore and Host Rock Mineralogy with Implications for Stockpiling, Processing and Waste Rock Handling (**R. Hopper, J. Hutchins, E. King, J. Noel**)
- 2:15 p.m. Plymouth Manganese Deposit: Open Pit Mine and Tailings Pit Design (**C. Botepe, A. Gillett, G. Motswagole, N. Publicover**)
- 2:45 **Break**
- 3:00 p.m. Geotechnical Aspects of Tailings Management at the Proposed Woodstock Manganese Mine (**S. Allen, K. DeLong, A. Dornan, S. McCarthy, C. Surins**)
- 3:30 p.m. Proposed Woodstock Manganese Mine: Surface Water Management and Reclamation Plan (**L. Blaney, N. Johnson, M. Murdoch, A. Turcotte, and B. Xu**)

### Instructors:

K. Butler  
G. Violette

### Industrial Co-mentor:

R. Adair

### Client:

Minco PLC

### Academic Co-mentors:

D. Lentz  
B. Cooke  
S. Kruse

K. MacQuarrie

W. Oh  
K. Singh

B. Broster

N. Susak

## Software Engineering – Devon Room

- 10:10 a.m. Opening Remarks
- 10:15 a.m. *Eigen Image Relation Engine*  
(**F. Jokulsdottir, R. Killam, B. Williams**)
- 10:45 a.m. *SmartGPS* (**G. Shi, J. Zhu, H. Zhou**)
- 11:15 a.m. *Roof Top Solar Potential Estimator*  
(**A. Alabdullatif, A. Alangari, D. Rushton**)
- 11:45 a.m. *Autobit* (**J. Abiertas, S. Jesso, D. Vent**)
- 12:15 p.m. Closing Remarks

### Course instructor:

Y. Biletskiy

### Industrial Co-Mentors:

S. Everett  
I. Delong  
D. Beauvais

### Clients:

Eigen Innovations  
SG2B Electric



## Chemical Engineering – Barkers Point Room

- 8:20 a.m. Opening Remarks
- 8:30 a.m. Point Lepreau Generating Station  
Demineralized Water Treatment Plant  
Replacement (**D. Lusic, J. McLaughlin,  
C. Rutledge, B. Sanford**)
- 9:00 a.m. Point Lepreau Water Treatment Plant  
Replacement (**J. Booy, P. Thomas,  
B. White, A. Woodrow**)
- 9:30 a.m. Design Of a New Hydrogen Plant For The  
Irving Oil Refinery (**A. Ayogu-Eze,  
R. Baoliki, E. Hayes, K. McCavour**)
- 10:00 a.m. Break
- 10:15 a.m. Hydrogen Plant for Irving Oil Refinery  
(**D. Blake, S. Flanagan, S. Taviss,  
H. Tomney**)
- 10:45 a.m. Extracting Lignin from Black Liquor  
(**P-A. Themens, R. Lutes, B. Al-Balawi**)
- 11:15 a.m. Lignin Extraction from Kraft Black Liquor  
(**J. Clowater, P. O'Hearn, A. Sanford,  
R. Silliker**)
- 11:45a.m. The Enhanced Removal of Hemicellulose  
In the J.D Irving Pulp and Paper Mill  
(**A. Gauthier, D. Nyanasegaram,  
J. Parkinson, L. Olawale**)
- 12:15 p.m. Lunch
- 1:15 p.m. Chemically Altering Hardwood Pulp Fibres  
to Increase the Volume of Tissue Products  
(**D. Bourque, B. Crabb, L. Shaw, J. Spires**)

## Chemical Engineering – Barkers Point Room

- 1:45 p.m. LignoMESH: Bottleneck Reduction  
Through Biofuel Production (**L. Esau,  
J. Hearn, C. McNamara, A. Seymour**)
- 2:15 p.m. Lignin Removal from Kraft BlackLiquor  
(**E. Park, J. Russell, M. Alsoina,  
M. Alsaileek**)
- 2:45 p.m. Break
- 3:00 p.m. Energy Recovery System for The Greater  
Moncton Wastewater Treatment Plant  
(**A. Aldossary, T. Fogarty, M. King,  
J. LeBlanc, S.Preston**)
- 3:30 p.m. Closing Remarks

Academic	Industrial	Clients:
Co-Mentors:	Co-Mentors:	Irving Tissue
G. Bendrich	D. Tracy	GMWC
M. Couturier	C. Malenfant	Irving Oil
J. Miles	B. McCann	Irving Pulp and Paper
Y. Ni	M. Beshare	NB Power
W. Cook	B. MacPherson	Northern Pulp
K. Li	B. Crawford	
F. Chibante	M. Richard	

## Civil Engineering – Nashwaaksis B Room

Replacement of the Waterloo Row Bridge

- 10:15 a.m. (C. Cameron, R. MacDonald,  
B. Morehouse, B. Noade, R. Tracey)  
10:20 a.m. (H. Ashour, S. Haddon, E. MacLeod,  
L. MacNeill, R. Praeg)  
10:25 a.m. (J. Harman, B. Lawrence, T. MacLean,  
A. Richard, L. Storey)

Rehabilitation of the Tobique Narrows Dam Bridge

- 10:30 a.m. (J. Beaton, S-W. Chung, D. DeGooyer,  
D. Lockhart, S. Weagle)  
10:35 a.m. (C. Barrett, A. Basuel, M. Conrad, S. Duan,  
A. Fakhroo)  
10:40 a.m. (R. Brigham, V. Luong, J. McLaughlin,  
S. Montgomery, J. Saadeh)

Reconstruction of the Starkey Brook Crossing

- 10:45 a.m. (A. Gilks, M. Hopper, M. Jupic, L. Pfister,  
P. Puente)  
10:50 a.m. (J. Brown, M. Clark, B. Daisley, C. Glenen,  
A. Richard)  
10:55 a.m. (J. Cormier, G. Cuellar, A. Espinosa,  
S. Lapointe, A. Zamiri)

Roundabout to Connect Route 8 and College Hill

- 11:00 a.m. (P. Donahoe, S. Forestell, T. Hamilton,  
E. Orser, T. Vanwiechen)  
11:05 a.m. (T. Colwell, K. Cormier, D. Dennis,  
A. Lawlor, B. Searle)

## Civil Engineering – Nashwaaksis B Room

Clients:

City of Fredericton - Sean Lee  
NB Department of Transportation and Infrastructure -  
Tracy MacDonald  
City of Fredericton - Jon Lewis  
NB Department of Transportation and Infrastructure -  
Lindon Miller

Industrial Mentors:

D. Russell  
D. Richard  
K. Amos  
D. Smal

Academic Mentors:

E. Hildebrand  
B. Wilson  
P. Bischoff  
W. Oh  
M. Sanchez

## Technology Management and Entrepreneurship - Nashwaaksis Room

- 12:30 p.m. Demos: Judges  
1:00 p.m. Demos; Open to public  
1:35 p.m. Opening Remarks  
1:45 p.m. Limbic: An electric longboard control system based on natural body movement  
**(A. Matson, A. Aikens, A. El-Bayoumi, J. Richard)**  
2:15 p.m. Ambit: Setting safe boundaries for your pets  
**(A. Tellez, T. Sangster, C. Rent, J. Kelly)**  
2:45 p.m. **Break**  
3:00 p.m. Stash: Thermal storage for improved heat pump efficiency and cost savings  
**(J. Kennie, J. MacLean, D. Larsen, E. Hatfield)**  
3:30 p.m. Precious Cargo: A handheld device for testing car seat compliance and safety  
**(I. Thomas, P. Shean, Z. Bannister, S. Moore)**  
4:00 p.m. Saros: Simplifying the teaching of positioning in sports using real-time feedback  
**(J. Waye, A. Battah, K. Bowman, A. Wall)**

Course Instructors:  
E. Scheme  
D. Shukla  
Industrial Co-Mentors:  
C. Plourde  
T. Sisk  
J. Richard  
L. Bulmer

Entrepreneur in Resident:  
J. Arsenaull  
Designers in Residence:  
J. Leroux  
A. Bostwick

Academic Mentors:  
A. Kiani (ME)  
J. Hall (ME)  
J. Meng (ECE)  
J. Sensinger (ECE)

## Electrical and Computer Engineering – Devon Room

- 3:00 p.m. An Energy Storage System for Wind Turbines  
**(S. Buck, M. Malone, R. McSheffery, R. Meng)**  
3:30 p.m. Self-Learning Home Automation  
**(N. Baker, M. Scott, Z. Chambers, T. Stewart)**  
4:00 p.m. Electronic Systems for the Sport of Flyball  
**(J. Buckler, E. MacLean, D. McLeod, A. Sterner)**  
4:30 p.m. GUI and Control System for Research Board Press  
**(W. Koi, S. Mazerolle, P. Mullin, E. Smith, C. Stewart)**

Academic Co-mentors:  
S. Saleh, E. Castillo Guerra

Course Instructors;  
B. Briggs, T. Lavigne

Industrial Co-mentor: P. Kreidi

Clients:  
Electrical and Computer Engineering Department  
On My Go! Flyball Club  
Faculty of Forestry & Environmental Management

## Schedule at a Glance

	Barkers Point	Devon	Marysville A	Marysville B	Nashwaaksis A & B
8:30 am	Chemical Engineering	Multi-Disciplinary Engineering	Geodesy and Geomatics	Mechanical Engineering	
9:00 am					
9:30 am					
10:00 am	Coffee Break				
10:15 am	Chemical Engineering	Software Engineering	Geodesy and Geomatics Engineering	Mechanical Engineering	Civil Engineering
10:45 am					
11:15 am					
11:45 am					
12:15 pm	Lunch (not provided)				
1:15 pm	Chemical Engineering	Mechanical Engineering	Geological Engineering	Mechanical Engineering	Technology Management and Entrepreneurship
1:45 pm					
2:15 pm					
2:45 pm	Break				
3:00 pm	Chemical Engineering	Electrical and Computer Engineering	Geological Engineering	Mechanical Engineering	Technology Management and Entrepreneurship
3:30 pm					
4:00 pm					
4:30 pm					
5:00 pm					

Posters and prototypes will be available to be viewed on the second floor anytime during the day.

Students will be available for questions during coffee breaks and the lunch hour.