

UW CHEMICAL ENGINEERING
TECHNICAL SUPPORT TEAM
NEW GRAD / CO-OP ORIENTATION
W-22 TERM

WATERLOO
ENGINEERING

engineering.uwaterloo.ca





.....

*to all our New Co-op, Grad Students
and Visitors....*

*and we wish you “**All the Best**”
going forward with your research
and studies.*



We are here to HELP YOU...



Tom Dean

E6 4020

Ext. 31166

Director – Technical Operations and Dept. H&S Chair

- Overall responsibility -“smooth department technical operations”
- Overseeing the Health and Safety programs and improvements.

Technical Support Team of 11 Personnel:

Mandate is to provide support that is:

- Capable
- Accessible
- Accountable
- Timely Action and Completion
- Quality Results



Chem Eng – Tech Team Members:

- Tom Dean – Director of Technical Operations
- Dennis Herman – Manager – Information Systems
- Ravindra Singh – Information Technology Specialist
- Bert Habicher – Mechanical Systems Designer
- Charles dal Castel – Manager – Analytical Lab and Safety Officer
- Rick Hecktus – Mechanical Technician / Shipper&Receiver
- John Zhang – Manager – Undergrad Lab Instructors
- Jenn Moll – Undergrad Lab Instructor
- Cheryl Newton – Undergrad Lab Instructor
- Neil McManus – Undergrad Lab Instructor – NanoEngineering
- Ahmad Ghavami – Undergrad Lab Instructor – NanoEngineering
- Emaad Alam – Co-op Assistant Project Manager



Chem Eng – Safety Program Elements:

- **“SAFETY FIRST” culture and mindset – “Work safe, Go home safe.”**
- **ChE Safety Committee – 6 members**
- **ChE Safety Manual - On-line (ChE Website)**
- **ChE Safety Audits – every Lab each Term**
- **Supervisor Safety Audits – each Lab, once per month**
- **Engineering Safety Planning Committee – all Eng depts**
- **JHSC – 1 member**
- **WIN Safety Committee - member**



Chem Eng – New Grad Safety Requirements:

1. Read **ChE Safety Manual** – Online (ChE Website).

<https://uwaterloo.ca/chemical-engineering/safety-first/chemical-engineering-safety-manual>

2. Complete **Safety Training** (5 year validity)
3. Plan Your Research and Create **Lab Hazard Analysis**.
4. Create and Submit **Research Safety Report** and **Declaration Page**.
5. Always **Work Safely**, and **Coach Others** to **Do The Same!!**



UW - CHE TECHNICAL SUPPORT TEAM – PILLARS

E6 – DWE – QNC
Faculty Teaching / Lab Research

“Safety First”

IS / IT- Computers, Electronics

Mechanical Works

Undergraduate Labs

Analytical Lab Svcs

Shipping and Receiving

Chemical Waste Disposal

“PILLARS of SUPPORT”

- Charles
- Co-op
- Tom
- Faculty

- Dennis
- Ravindra

- Bert
- Rick

- John
- Jen M.
- Cheryl
- Jen C.
- Neil
- Ahmad

- Charles
- Co-op

- Rick

- Rick

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Chem Eng – New Grad Safety Training Plan:

1. Safety Training Modules – mandatory 4 online courses:
 - SO1001 - Employee Safety Orientation
 - SO1081 - Workplace Violence Awareness
 - SO2017 - WHMIS 2015
 - SO1010 - General Lab Safety (only if performing Lab Research)
2. Research Safety Report, Hazard Analysis and Declaration Page
 - Required before starting lab research
3. Lab Safety Fundamentals Review – 1 hr classroom training, ~ Feb.
4. Praxair / Swagelok Safe Compressed Gas Review – 1 hr classroom, ~Feb



Charles dal Castel

E6 3102

Ext. 33311

***Analytical Chemist, Manager of Analytical Services and
Lab Safety Coordinator***

Services Provided:

- Shared Departmental Laboratory maintenance and user orientation
- Chemical analysis and materials testing
- Analytical chemistry troubleshooting
- Method/protocol development
- Instrument installation, testing and maintenance
- Analytical quality control and data interpretation
- Chemical and general laboratory safety
- Analytical software installation and testing
- Equipment purchasing assistance
- General chemistry consultation



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Health & Safety Resources:

- Required to complete all safety training/documentation requirements prior to the start of work
- Online training – min. 4 online safety modules for lab res
- Safety reports outlining research and hazards.



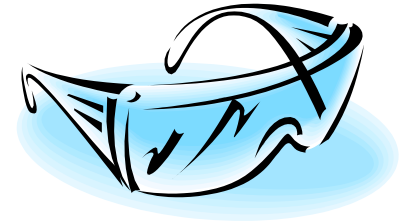
Safety Reports:

- ****DEPARTMENTAL REQUIREMENT****
- Must be written specifically to the project and completed before working in the lab; include one completed **lab risk assessment form** for each process/procedure; nano research must include the **nano risk worksheet**
- Must describe research plan and demonstrate awareness of specific dangers and a plan of action to address problems if they arise
- If any terms should change over the course of work, the safety report needs to be revised and approved: i.e., more risk assessment forms.



Safety Inspections:

- Completed every term by lab safety groups
- Results reviewed by department safety committee
- An operation seen as unsafe can be shut down until the problem is resolved



Analytical Lab Services (Department Instruments):

- 2 ways to utilize the lab: submit samples to be analyzed or receive training on the equipment to perform analysis oneself
- Chain of custody form (online) must be filled out when samples are submitted
- Lab equipment available is as follows:



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Analytical Instruments Available in E6-3103, 3107 and 3109 Suite:

<u>No.</u>	<u>INSTRUMENT NAME</u>	<u>MODEL</u>	<u>DESCRIPTION</u>
1.	Dionex IC	DX-500	Determination of ions in aqueous solution
2.	TA Instruments TGA	Q-500	Measures weight changes over time and temperature
3.	TA Instruments DSC	Q-2000	Measures heat flow of material transitions over time and temp.
4.	Agilent GC	6890A	Determination of volatile, semi-volatile & gaseous org. compounds
5.	Varian GC/MS/MS	Saturn 2000	Determination / ID of volatile and semi-volatile org. compounds
6.	Bruker XRD	D8 Focus	Crystal structure and properties of powdered materials
7.	Teledyne-Leeman ICP	Prodigy	Determination of metals in solution
8.	Waters HPLC	Alliance	Determination of non-volatile organic species in solution
9.	Micromeritics SAA	Gemini	Surface area analysis of solids
10.	Jasco CDS	J-815	Difference in absorption of left/right circularly polarized light

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Dennis Herman E6 2002 dherman@uwaterloo.ca Ext. 32196

Chem Eng Information Services

Dennis Herman - Manager of Information Services

Ravindra Singh - Information Technology Specialist

- Provide services for all Chem Eng departmental
 - Information Systems
 - Computer Systems
 - Data Network systems



How to Submit “Service Requests” to the Information Services Group

1. Visit <http://chemeng.uwaterloo.ca>
then Resources | Services, then RT (Request Tracker) Service Request(Web Form)
2. Send email to request@che.uwaterloo.ca
3. Only require Form Submission if request will take longer than 15 minutes to resolve

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Chem Eng Information Services (cont'd):

Account IDs

- One account for access to all campus and cloud services
 - Wireless, Quest, Learn, workstations, printers, fileshares etc.
 - Nexus – Microsoft Windows Active Directory account
 - Microsoft 365 office.com

How to get one

- WATIAM account provided to all students at time of registration
- Postdocs and visitors must be manually created
 - Email to dhorman@uwaterloo.ca or r5singh@uwaterloo.ca

Manage account IDs via WATIAM

- Waterloo Identity Access Management <http://watiam.uwaterloo.ca>
 - Change password
 - Set email forwarding

Credentials always specified as :

- Userid or [userid@uwaterloo.ca](mailto:user@uwaterloo.ca) or “nexus\userid”

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Information Services (cont'd):

Email

- Microsoft 365 = portal.office.com
 - Microsoft 365 accounts for faculty, staff and grads
 - Visitors here for longer than 1 year.
- Visitors here for 1 year or less forward user@uwaterloo.ca to cloud email servers
 - Gmail.com, yahoo.com, Hotmail.com etc.
 - Can get Microsoft 365 account with request from supervisor to dherman@uwaterloo.ca

Xerox scanner, copier, printer accounts

- 1 Xerox work centre 5335 available for all grads in E6 5028 (Grad Lounge)
- Account IDs for consumables available from Ellen E6 3024
 - printing and copying
 - Scanning to email does not require account ID



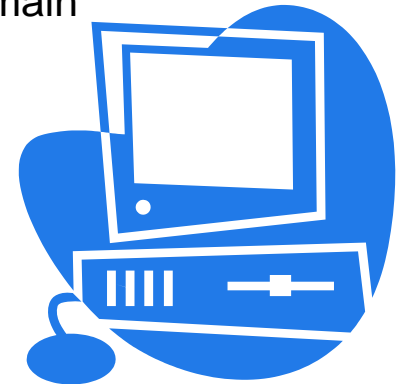
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Computer Services:

- Hardware specification, purchase, installation, connectivity, management, administration, diagnose, repair, decommissioning, and replacement.
- Office PC, document processing, data acquisition and/or control, data storage, data archival, etc.

Networking

- Centrally managed
 - Department network = Nexus Microsoft Active Directory Domain
- Self managed
 - Wired or wireless connectivity, self managed
- Remote access from off campus via <http://vpn.uwaterloo.ca>
 - UW VPN server = cn-vpn.uwaterloo.ca



Consulting Services:

- Application software/hardware specification, selection, purchase, license
- Application and hardware troubleshooting, diagnosis, and repair
- Research grant application assistance

Ravindra Singh

E6 1116/DWE2526B

Ext. 33139

Information & Technology Specialist

Services Provided:

- Computer network infrastructure and network security systems
- Computer workstation procurement, commissioning, software deployment, desktop management, hardware and operating system diagnosis and repair, maintenance and decommissioning
- Computer server commissioning, software deployment, administration, hardware and operating system diagnosis and repair, maintenance and decommissioning
- Specialized computer subsystems procurement, commissioning, software deployment, administration, maintenance and decommissioning
- Data acquisition/control, computer presentation systems, computer imaging systems, etc.



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Services Provided Continued...

- User support services including: account administration, application software diagnosis and repair, system and application software consulting, etc.
- Providing support for Electronics and Electrical problems; guiding for best service options
- Advise faculty members and graduate students on the arrangement of their experiments (electrical, electronic and data acquisition systems)
- Supervise and advise graduate students working in Electronic Shop
- Make electrical safety checks on electrical equipment and electrical outlets in laboratories
- Responsible for operation and maintenance of Electronic & Computer Shops:
 - DWE 2526 and E6 1118
- Instruct graduate students on how to handle sophisticated electrical and electronics equipment
- Computer and network services including Microsoft active directory management, authentication, firewall, anti-malware, file, print, backup, web, SharePoint, mail, data storage, etc.



Bert Habicher

E6 1120

Ext. 36782

Mechanical Systems Designer

Services Available:

- **Process Design**
 - Process flow examination
 - Process validation
- **Mechanical/ Structural Design**
 - Supporting structures and frameworks
 - Safety (pressure/load-bearing)
- **Fabrication**
 - Limited machine facilities
 - Limited welding facilities
- **Assembly**
 - Plumbing
 - > Soldering (hard and soft)
 - > Threading
 - > Tube compression fitting
 - **Frameworks**
 - > Dexion
 - > Unistrut, Canstrut
 - > Cut and weld angle channel



“Service Requests” for Mechanical Services

Use the RT (Request Tracker) system:

Visit <http://chemeng.uwaterloo.ca>

then Resources | Services, then RT (Request Tracker) Service Request (Web Form), select Mechanical Services.

- Fill out Form completely
- Account number (for Research work)
- Completed and Approved Safety Report
- Please have a clear notion of starting materials and conditions, and the expected product and product conditions.

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Rick Hecktus

DWE 1521

Ext. 32291

Mechanical Technician for DWE and Dept. Shipper / Receiver

Requisitioning:

- To purchase items from outside suppliers you will have to create a **Unit4 Purchase Requisition** from the main office or your supervisor
- You will need a Work Order number from your supervisor and must include your name and your phone extension and your lab room number in the "deliver to" fields
- Central Stores Compressed Gas Bottle – Order Form
<https://uwaterloo.ca/central-stores/gas-cylinder-management/gas-cylinder-order-pick-form>

Receiving and Deliveries:

- All items ordered with a PO will be shipped to **Central Stores** and delivered to ChE. Receiving
- Compressed gas cylinders are delivered directly to the Labs in E6 and DWE
- Packages brought to ChE Receiving will be delivered to their respective people
- Deliveries are done daily in the afternoons



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Hazardous Waste:

- ChE. Receiving & Shipping provides the researcher a place to bring waste chemicals
- Please have your containers labelled, in full, prior to arrival
- Containers should be clean and free of contaminants on the outside surface and transported without the use of gloves
- You will be asked to classify the waste as either acid, base, flammable, oxidizer or toxic
- For the bio-waste containers, the yellow bag inside must be tied closed

The scheduled “Drop-Off” times are every Tuesday:

1:00 pm to 1:20pm in DWE 1521

2:00pm to 2:20pm in E6 1022

Other Services:

- Primary mechanical support technician for DWE labs and offices
- Request services via RT (Request Track) system.



Thank you.....



QUESTIONS???