



**SCHOOL OF CHEMICAL, ENVIRONMENTAL & BIO-TECHNOLOGY**

# **STUDENT HANDBOOK**

For  
Students in Programs in:

**533 Chemical Engineering Technology**  
**453 Environmental Technician**  
**463 Environmental Technician (Internship)**  
**369 Biotechnology**  
**669 Biotechnology (Internship)**  
**370 Biotechnology-Health**  
**670 Biotechnology-Health (Internship)**

**Revised 30 September for**  
**FALL 2013**

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Mohawk College of Applied Arts and Technology

School of Chemical Environmental & Biotechnology

Administration, Faculty and Support Staff

Post-Secondary Diploma and Certificate Programs

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## WELCOME FROM FACULTY AND STAFF

This handbook is to provide guidance and information for students. Every effort is made to keep this handbook accurate and timely. Prospective students should however, check with the School of Chemical, Environmental & Biotechnology for details regarding admission requirements, enrolment limitations, co-operative education, and the program of studies for the various programs offered by the school. For more information visit our website at [www.mohawkcollege.ca](http://www.mohawkcollege.ca)

### **Information Contacts**

For general information about –

Mohawk College	(905) 575-1212
Admissions	
Post-Secondary	ext 2415
Continuing Education	ext 2422
Counselling Department	ext 2211
Disability Services	ext 2389
Financial Aid & Awards	ext 2133
Mohawk Job Centre	
Cooperative Education	ext 2167
Student & Graduate Employment Service	ext 2167

For specific information about –

#### **Biotechnology Technician**

Ms. Cindy Mehlenbacher,	(905) 575-1212 ext 3122
Mr. Ayaaz Pirani	(905) 575-1212 ext 3239

#### **Biotechnology Technician – Health & Chemical Engineering Technology –Environmental**

Mr. Daniel Wilson	(905) 575-1212 ext 3240
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#### **Chemical Engineering Technology & Environmental Technician**

Ms. Cindy Mehlenbacher,	(905) 575-1212 ext 3122
Mr. Ayaaz Pirani	(905) 575-1212 ext 3239

#### **Pretechnology & Pretech Pretrades**

Ms. Cindy Mehlenbacher	(905) 575-1212 ext 3122
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## **MOHAWK COLLEGE OF APPLIED ARTS AND TECHNOLOGY**

Mohawk College has grown to be one of the great Canadian community colleges. It began with the establishment of the Provincial Institute of Textiles (PIT) in 1947, which in turn became the Hamilton Institute of Technology (HIT) in 1957. Ten years later, in 1967, the HIT was incorporated as the newly established Mohawk College of Applied Arts and Technology. The College supports campuses and education centres in Brantford, Hamilton, and Stoney Creek.

A great variety of full-time, post-secondary certificate and diploma programs together with a wide range of part-time courses and programs, leading to either a certificate or college diploma, are possible in the following areas:

- Business
- Continuing Education
- Engineering Technology
- Health Sciences
- Human Services
- Interdisciplinary Studies
- Media, Graphics & Communication
- Skilled Trades and Apprenticeships

Many of the programs are co-operative in nature, offering students the opportunity to experience the real workplace environment and gain valuable on-the-job training. The college also has many partnerships in training and technology to make us more valuable to the students and the community at large.

Mohawk College serves the communities throughout Southern Ontario, offering over 100 full-time programs and more than 1,000 Continuing education courses. There are currently 10,000 full-time post-secondary students enrolled at Mohawk College and 40,000 continuing education students. Mohawk College is the largest in-school apprenticeship trainer in the province, with more than 3,000 apprentices registered in skilled trades programs. There are close to 800 full-time employees, including over 400 faculty, and an alumni association of more than 72,000 members. There is also a 342 bed on-campus student residence.

The Accessible Learning Services staff develops ways to eliminate barriers and facilitates access for students at all campuses that may have learning or physical disability, visual or hearing impairment, mobility impairment, or other disability. Student self-identification well in advance of course or program start-up is required to effectively evaluate, plan, co-ordinate, and implement support service. For more information please contact the Accessible Learning Services.

Make Mohawk College your choice...and if you're not sure, ask a graduate!

Visit the College's website at [www.mohawkcollege.ca](http://www.mohawkcollege.ca).

## **SCHOOL OF CHEMICAL ENVIRONMENTAL & BIOTECHNOLOGY**

The School of Chemical Environmental & Biotechnology is a part of the Faculty of Engineering Technology at Mohawk College. We offer full-time post-secondary diploma and certificate programs in various disciplines.

### **BIOTECHNOLOGY**

Learn the fundamentals of pharmacology, biochemistry, genetics and genetic engineering, cell biology, microbiology, analytical instrumentation and biochemical engineering.

### **BIOTECHNOLOGY (HEALTH)**

Learn the fundamentals of biotechnology as employed in the Health sector: Human biology, pharmacology, genetics, forensics, microbiology, analytical instrumentation and medical devices, clinical labs.

### **CHEMICAL ENGINEERING TECHNOLOGY**

Understand the theoretical and practical lab skills required to develop a wide range of traditional and modern instrumental techniques used in fields such as Analytical, Organic and Physical Chemistry, Chemical Engineering and Process Automation.

### **ENVIRONMENTAL TECHNICIAN**

Learn the fundamentals of solid waste, water and wastewater treatment, Study air pollution monitoring and control, learn how to sample and analyze for environmental pollutants, Study the fundamentals of occupational safety and industrial hygiene, Gain knowledge of environmental regulations, audits and ISO14000.

### **PRETECHNOLOGY**

Improve your math, science, computer and communication skills prior to entering a technician/technology diploma program.

## ADMINISTRATION, FACULTY & SUPPORT STAFF – CHEMICAL

**DEAN** Tony Thoma, B.Sc., BBA, MBA, P. Eng.

**ASSOCIATE DEAN** Bill Brimley, Ph.D., P. Eng.

**ADMIN ASST** Linda Wilson

**TECHNOLOGISTS**  
William Rolfe  
Randy Travis  
Fiona Winterton

### **FULL TIME FACULTY (ADD Degrees Designations)**

Monica Crawford  
Greg Emery  
Jeff Kemp  
Kamala Kruse  
Lukose Mathew  
Greg Matzke  
Chris McCrory  
Cindy Mehlenbacher  
Jay Mycroft  
Ayaaz Pirani  
Farag Soliman  
Lorraine Vanderzwet-Servos  
Usha Vivegananthan  
Dan Wilson

### **PART TIME FACULTY (ADD Degrees Designations)**

Ron Capobianco  
Marvin Faber  
Asif Mohammad  
Donald Shaw  
Bishwar Prabir  
Jawed Zobia

## **JOB CENTRE/COOPERATIVE EDUCATION**

Dean of Interdisciplinary Studies  
Employment Consultant (Biotech , Chemical)

Jim Vanderveken  
Lisa Dietrich

## **POST-SECONDARY DIPLOMA AND CERTIFICATE PROGRAMS**

The School of Chemical Environmental & Biotechnology offers both two-year diploma programs (Technician), and three-year advanced diploma program (Technology) leading to a Degree.. We also offer a one-year certificate program in Engineering Foundations Programs.

The **Technician** programs offered include:

Biotechnology – 369/445  
Biotechnology (Health) – 370/756  
Environmental Technician – 453/463

The **Technology** program offered

Chemical Engineering Technology - 533

The **Certificate** program offered includes:Engineering Technology Preparatory Programs

Pretrades and Pretechnology - Aboriginal Certificate Program - 101  
Pre-Technology Certificate Program - 168  
Pre-Technology (Environmental Foundations) Certificate Program - 342  
Pre-Technology (Biotechnology Engineering Foundations) Certificate Program - 345  
Pre-Technology (Chemical Engineering Foundations) Certificate Program - 346

Students must meet the minimum requirement of eight months work experience on co-op in order to graduate with a Co-op Diploma. Students within each discipline must compete for the available co-op jobs, and go through an interview and selection process. There is a service fee for co-operative education. The department is assisted by the Job Centre and Co-operative Education whose sole purpose is to seek out positions, assist the students in getting placed, and evaluate their performance in the field. For more information on co-op please see the Co-operative Education section in this handbook or see Cooperative Education on the college



# 533 CHEMICAL ENGINEERING TECHNOLOGY PROGRAM OF STUDIES (POS)

Please refer to the appropriate Program website for your most recent POS.

**Old PLA Codes**  
 N-Not Eligible, C-Challenge, E-Portfolio or Challenge, P-Portfolio, PC-Combination of Portfolio and Challenge

## Mohawk College Program of Studies (includes prerequisites and/or equivalents)

**New PLA Codes**  
 NE-Not Eligible, PCE-Challenge, PPA-Portfolio Assessment, PPD-Portfolio Development Course, PAA-Articulation Agreement, PDE-Demonstration

### 533 13-A Chemical Engineering Technology Status-A Req. Grad GPA: 60

Subj-Crse-Effective Term	Course Title	Crds	Promo Grade/Mode	Serv	Stat	TrinCrsc	Type	Wks	Hrs	Total	Comments	PLA
<b>Sem 1 Semester Promotion GPA: 60</b>												
<b>Core Courses</b>												
CHEM 10006	201230 General Chemistry 1 Lecture	5	50	1	N	A	<input type="checkbox"/>	Lec	14.00	5.00	70.00	
CHEM 10007	201230 General Chemistry 1 Lab	1	50	1	N	A	<input type="checkbox"/>	Lab	14.00	1.50	21.00	
CRSD CB106	000000 Intro To Career Education	0		2	N	A	<input type="checkbox"/>	Lec	14.00	0.50	7.00	
MATH MS173	000000 Mathematics	4	50	1	Y	A	<input type="checkbox"/>	Lec	14.00	4.00	56.00	
PHYS 10001	201230 Physics 1 Lecture	4	50	1	N	A	<input type="checkbox"/>	Lec	14.00	4.00	56.00	
PHYS 10002	201230 Physics 1 Lab	1	50	1	N	A	<input type="checkbox"/>	Lab	14.00	1.00	14.00	
SAFB 10037	201230 H&S in Our Environment	2	50	1	Y	A	<input type="checkbox"/>	Lec	14.00	2.00	28.00	
<b>Option group 1 Select 1 course(s) from option list below:</b>												
COMM 11040	201230 Communication D	4	50	1	Y	A	<input type="checkbox"/>	Lec	14.00	4.00	56.00	COMM Strategy addition
COMM LL041	201330 Communication	3	50	1	Y	A	<input type="checkbox"/>	Lec	14.00	3.00	42.00	COMM Strategy addition

**Promo Grade Modes**  
 1-Credit - Percentage/Alpha 4-For Exemption Only  
 2-Credit - RequirementsMet 5-Apprenticeship History  
 3-Non Credit 6-Percent/Alpha-Wk/Tm \_

**Old PLA Codes**

N-Not Eligible, C-Challenge, E-Portfolio or Challenge, P-Portfolio, PC-Combination of Portfolio and Challenge

**Mohawk College Program of Studies**  
(includes prerequisites and/or equivalents)

**New PLA Codes**

NE-Not Eligible, PCE-Challenge, PPA-Portfolio Assessment, PPD-Portfolio Development Course, PAA-Articulation Agreement, PDE-Demonstration

**533 13-A Chemical Engineering Technology Status-A Req. Grad GPA: 60**

Subj-Crse-Effective Term    Course Title    Crd    Promo Grade/Mode    Serv    Stat    TrinCr    Type    Wks    Hrs    Total    Comments    PLA

**Sem 2 Semester Promotion GPA: 60**

**Core Courses**

<b>CHEM 10008</b>	201310	General Chemistry 2 Lecture	4	50	1	N	A	<input type="checkbox"/>	Lec	14.00	4.00	<b>56.00</b>	
Prereqs: <b>ENTerm - 201310</b> ( CHEM 10006 General Chemistry And CHEM 10007 ) General Chemistry Or CHEMPH109 General Chemistry Or CHEMCH116 Chemistry Or ( CHEM 10028 Chemistry (Lec) And CHEM 10029 ) Chemistry (Lab)													
<b>CHEM 10009</b>	201310	General Chemistry 2 Lab	2	50	1	N	A	<input type="checkbox"/>	Lab	14.00	2.00	<b>28.00</b>	
Prereqs: <b>ENTerm - 201310</b> ( CHEM 10006 General Chemistry And CHEM 10007 ) General Chemistry Or CHEMPH109 General Chemistry Or CHEMCH116 Chemistry Or ( CHEM 10028 Chemistry (Lec) And CHEM 10029 ) Chemistry (Lab)													
<b>COMM 10265</b>	201330	Critical & Innovative Thinking	2	50	1	Y	A	<input type="checkbox"/>	Lec	14.00	2.00	<b>28.00</b>	COMM10034 Replacmnt
Prereqs: <b>ENTerm - 201330</b> COMM 11040 Communication D Or COMM LL041 Communications (I Or COMM LL044 AC - Communicati													
<b>ELEC 10089</b>	201310	Electricity for Technology	4	50	1	Y	A	<input type="checkbox"/>	Lec	14.00	2.00	<b>28.00</b>	
					1		A	<input type="checkbox"/>	Lab	14.00	2.00	<b>28.00</b>	
Prereqs: <b>ENTerm - 201310</b> ( PHYS 10001 Physics 1 Lecture And PHYS 10002 Physics 1 Lab And MATHMS173 ) Mathematics Or ( PHYS PH120 Physics 1 And MATHMS173 ) Mathematics													

**Promo Grade Modes**

1-Credit - Percentage/Alpha    4-For Exemption Only  
 2-Credit - Requirements Met    5-Apprenticeship History  
 3-Non-Credit    6-Percent/Alpha-Work Term

**Old PLA Codes**  
 N-Not Eligible, C-Challenge, E-Portfolio or Challenge, P-Portfolio, PC-Combination of Portfolio and Challenge

**Mohawk College Program of Studies**  
 (includes prerequisites and/or equivalents)

**New PLA Codes**  
 NE-Not Eligible, PCE-Challenge, PPA-Portfolio Assessment, PPD-Portfolio Development Course, PAA-Articulation Agreement, PDE-Demonstration

**533 13-A Chemical Engineering Technology Status-A Req. Grad GPA: 60**

Subj-Crse-Effective Term    Course Title    Crds   Promo Grade/Mode   Serv   Stat   TrinCr   Type   Wks   Hrs   Total   Comments    PLA

**Sem 2 Semester Promotion GPA: 60**

**Core Courses**

<b>MATH 10024</b>	<b>200535</b>	Math	3	50	1	Y	A	<input type="checkbox"/>	Lec	14.00	3.00	<b>42.00</b>		
Prereqs: <b>ENTerm -200535</b> MATHMS173    Mathematics														
<b>MATH MS474</b>	<b>201110</b>	Statistics	3	50	1	Y	A	<input type="checkbox"/>	Lec	14.00	3.00	<b>42.00</b>		
Prereqs: <b>ENTerm -201110</b> MATHMS173    Mathematics														
<b>MATL MT207</b>	<b>201310</b>	Materials Technology	2	50	1	Y	A	<input type="checkbox"/>	Lec	14.00	2.00	<b>28.00</b>		
Prereqs: <b>ENTerm -201310</b> CHEMPH109    General Chemistry														
Or (    CHEM 10006    General Chemistry														
And    CHEM 10007    General Chemistry														

**Promo Grade Modes**  
 1-Credit - Percentage/Alpha    4-For Exemption Only  
 2-Credit - Requirements Met    5-Apprenticeship History  
 3-Non-Credit    6-Percent/Alpha-Wk/Term

**Old PLA Codes**  
 N-Not Eligible, C-Challenge, E-Portfolio or Challenge, P-Portfolio, PC-Combination of Portfolio and Challenge

**Mohawk College Program of Studies**  
 (includes prerequisites and/or equivalents)

**New PLA Codes**  
 NE-Not Eligible, PCE-Challenge, PPA-Portfolio Assessment, PPD-Portfolio Development Course, PAA-Articulation Agreement, PDE-Demonstration

**533 13-A Chemical Engineering Technology Status-A Req. Grad GPA: 60**

Subj-Crse-Effective Term    Course Title    Crd    Promo Grade/Mode    Serv    Stat    TrinCr    Type    Wks    Hrs    Total    Comments    PLA

**Sem 3 Semester Promotion GPA: 60**

**Core Courses**

<b>CHEM 10012</b>	201330	Chemical Engineering 1 Lecture	2	50	1	N	A	<input type="checkbox"/>	Lec	14.00	2.50	<b>35.00</b>		
Prereqs: <b>EFForm - 201330</b> ( CHEM 10008 General Chemistry And CHEM 10009 General Chemistry And MATH 10024 ) Math Or ( CHEMPH209 General Chemistry And MATH 10024 ) Math														
<b>CHEM 10013</b>	201330	Chemical Engineering 1 Lab	2	50	1	N	A	<input type="checkbox"/>	Lab	14.00	2.50	<b>35.00</b>		
Prereqs: <b>EFForm - 201330</b> ( CHEM 10008 General Chemistry And CHEM 10009 General Chemistry And MATH 10024 ) Math Or ( CHEMPH209 General Chemistry And MATH 10024 ) Math														
<b>CHEM 10030</b>	201230	Analytical Chemistry 1 Lecture	2	50	1	N	A	<input type="checkbox"/>	Lec	14.00	2.50	<b>35.00</b>		
Prereqs: <b>EFForm - 201230</b> ( CHEM 10008 General Chemistry And CHEM 10009 General Chemistry Or CHEMPH209 General Chemistry														
<b>CHEM 10031</b>	201230	Analytical Chemistry 1 Lab	3	50	1	N	A	<input type="checkbox"/>	Lab	14.00	3.00	<b>42.00</b>		
Prereqs: <b>EFForm - 201230</b> ( CHEM 10008 General Chemistry And CHEM 10009 General Chemistry Or CHEMPH209 General Chemistry														
<b>CHEM PH402</b>	201330	Inorganic Chemistry	2	50	1	N	A	<input type="checkbox"/>	Lec	14.00	2.00	<b>28.00</b>		
Prereqs: <b>EFForm - 201330</b> CHEMPH209 General Chemistry Or ( CHEM 10008 General Chemistry And CHEM 10009 ) General Chemistry														

**Promo Grade Modes**  
 1-Credit - Percentage/Alpha    4-For Exemption Only  
 2-Credit - Requirements Met    5-Apprenticeship History  
 3-Non-Credit    6-Percent/Alpha-Week Term

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**Old PLA Codes**  
 N-Not Eligible, C-Challenge, E-Portfolio  
 or Challenge, P-Portfolio, PC-  
 Combination of Portfolio and Challenge

**Mohawk College Program of Studies**  
 (includes prerequisites and/or equivalents)

**New PLA Codes**  
 NE-Not Eligible, PCE-Challenge, PPA-Portfolio  
 Assessment, PPD-Portfolio Development Course, PAA-  
 Articulation Agreement, PDE-Demonstration

**533 13-A Chemical Engineering Technology Status-A Req. Grad GPA: 60**

Subj-Crse-Effective Term   Course Title   Crds   Promo Grade/Mode   Serv   Stat   TrinCrds   Type   Wks   Hrs   Total   Comments   PLA

**Sem 3 Semester Promotion GPA: 60**

**Core Courses**

<b>ELEC 10090</b>	200930	Electronics for Technology	5	50	1	Y	A	<input type="checkbox"/>	Lec	14.00	3.00	<b>42.00</b>		
					1		A	<input type="checkbox"/>	Lab	14.00	2.00	<b>28.00</b>		
Prereqs: <b>EFTerm - 200530</b> ( <b>PHYS PH220</b> <b>Physics 2</b>														
Or <b>ELEC 10089</b> ) <b>Electricity for Tech</b>														
<b>MATH 10016</b>	200535	Math	3	50	1	Y	A	<input type="checkbox"/>	Lec	14.00	3.00	<b>42.00</b>		
Prereqs: <b>EFTerm - 200535</b> <b>MATH MS273</b> <b>Mathematics</b>														
Or <b>MATH 10024</b> <b>Math</b>														

**Electives**

<b>OPBL XXXXX</b>	200430	General Educ 1 Option Table	2		3	Y	A	<input type="checkbox"/>	Lec	13.00	2.00	<b>26.00</b>		
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**Promo Grade Modes**

1-Credit - Percentage/Alpha	4-For Exemption Only
2-Credit - Requirements Met	5-Apprenticeship History
3-Non-Credit	6-Percent/Alpha-Work Term

**Old PLA Codes**  
 N-Not Eligible, C-Challenge, E-Portfolio or Challenge, P-Portfolio, PC-Combination of Portfolio and Challenge

**Mohawk College Program of Studies**  
 (includes prerequisites and/or equivalents)

**New PLA Codes**  
 NE-Not Eligible, PCE-Challenge, PPA-Portfolio Assessment, PPD-Portfolio Development Course, PAA-Articulation Agreement, PDE-Demonstration

**533 13-A Chemical Engineering Technology Status-A Req. Grad GPA: 60**

Subj-Crse-Effective Term    Course Title    Crds    Promo Grade/Mode    Serv    Stat    TrinCr    Type    Wks    Hrs    Total    Comments    PLA

**Sem 4 Semester Promotion GPA: 60**

**Core Courses**

<b>CHEM</b>	10014	201410	Chemical Engineering 2 Lecture	3	50	1	N	A	<input type="checkbox"/>	Lec	14.00	3.00	<b>42.00</b>	Prereqs: <b>ENTerm - 201410</b> ( CHEM 10012 Chemical Engine And CHEM 10013 ) Chemical Engine Or CHEMCH303 Chemical Engine
<b>CHEM</b>	10015	201410	Chemical Engineering 2 Lab	2	50	1	N	A	<input type="checkbox"/>	Lab	14.00	2.50	<b>35.00</b>	Prereqs: <b>ENTerm - 201410</b> ( CHEM 10012 Chemical Engine And CHEM 10013 ) Chemical Engine Or CHEMCH303 Chemical Engine
<b>CHEM</b>	10016	201410	Organic Chemistry 1 Lecture	2	50	1	N	A	<input type="checkbox"/>	Lec	14.00	2.50	<b>35.00</b>	Prereqs: <b>ENTerm - 201410</b> ( CHEM 10008 General Chemistry And CHEM 10009 ) General Chemistry Or CHEMPH209 General Chemistry
<b>CHEM</b>	10017	201410	Organic Chemistry 1 Lab	3	50	1	N	A	<input type="checkbox"/>	Lab	14.00	3.00	<b>42.00</b>	Prereqs: <b>ENTerm - 201410</b> CHEMPH209 General Chemistry Or ( CHEM 10008 General Chemistry And CHEM 10009 ) General Chemistry
<b>CHEM</b>	10018	201410	Analytical Chemistry 2 Lecture	2	50	1	N	A	<input type="checkbox"/>	Lec	14.00	2.50	<b>35.00</b>	Prereqs: <b>ENTerm - 201410</b> ( CHEM 10030 Analytical Chemist And CHEM 10031 ) Analytical Chemist Or CHEMCH302 Analytical Chemist

**Promo Grade Modes**  
 1-Credit - Percentage/Alpha    4-For Exemption Only  
 2-Credit - RequirementsMet    5-Apprenticeship History  
 3-Non-Credit    6-Percent/Alpha-Wk/Trm

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**Chemical Engineering**

Old PLA Codes  
 N-Not Eligible, P-Portfolio, PC-  
 or Challenge, P-Portfolio, PC-  
 Combination of Portfolio and Challenge

**Technology Diploma Mohawk College Program of Studies**

**(includes prerequisites and/or equivalents)**

New PLA Codes  
 NE-Not Eligible, PCE-Challenge, PPA-Portfolio  
 Assessment, PPD-Portfolio Development Course, PAA-  
 Articulation Agreement, PCE-Demonstration

**533 13-A Chemical Engineering Technology Status-A Req. Grad GPA: 60**

Subj-Crse-Effective Term	Course Title	Crds	Promo	Grade/Mode	Serv	Stat	Trig	Crs	Type	Wks	Hrs	Total	Comments	PLA
CHEM 10019 201410	Analytical Chemistry 2 Lab	3	50	1	N	A			Lab	14.00	3.00	42.00	Prereqs: EffTerm - 201410 CHEMCH302 Analytical Chemist Or ( CHEM10030 Analytical Chemist And CHEM10031 ) Analytical Chemist	
MATH 10013 200930	Design Of Experiments	3	50	1	Y	A			Lec	14.00	3.00	42.00	Prereqs: EffTerm - 200930 MATHMS474 Statistics Or MATHMA482 Statistics 2 Or MATH10019 Statistics 1	
MGMT 10091 201410	Chemical Management Principles	3	50	1	N	A			Lec	14.00	3.00	42.00	Prereqs: EffTerm - 201410 CHEMPH209 General Chemistry Or ( CHEM10008 General Chemistry And CHEM10009 ) General Chemistry	

**Sem 4 Semester Promotion GPA: 60**

**Core Courses**

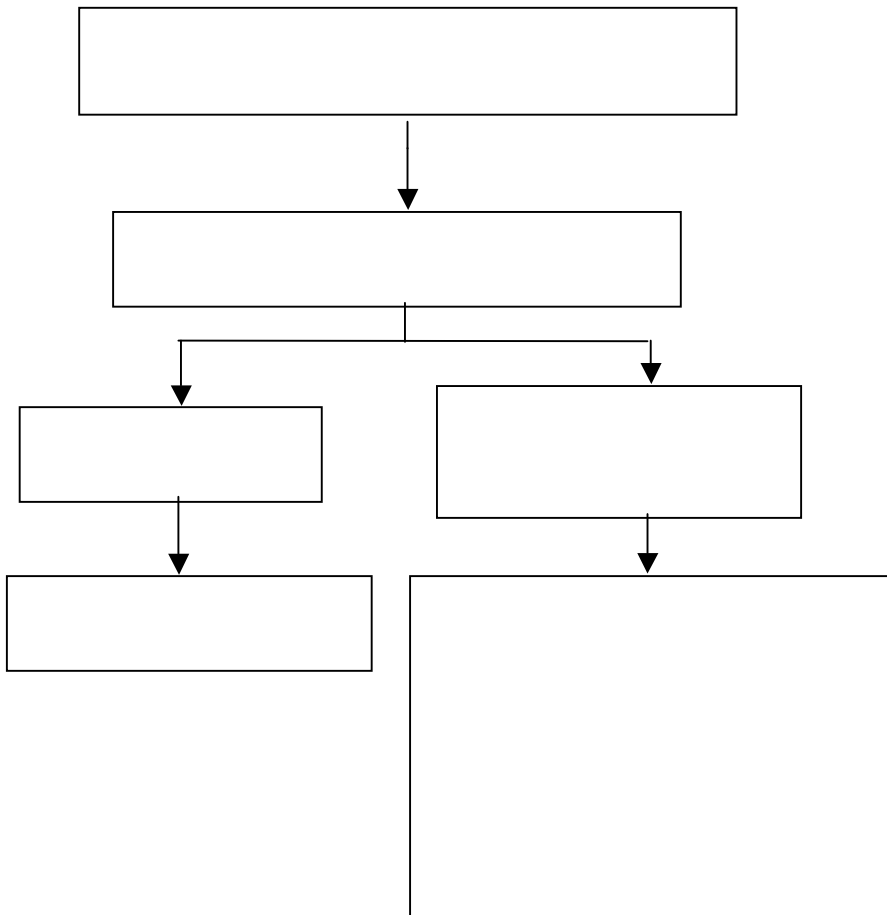
Promo Grade Modes

1-Credit - Percentage/Alpha  
 2-Credit - RequirementsMet  
 3-Non-Credit  
 4-For Exemption Only  
 5-Apprenticeship History  
 6-Percent/Alpha-WrkTrm

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Old PLA Codes  
 N-Not Eligible, C-Challenge, E-Portfolio or Challenge, P-Portfolio, PC-Combination of Portfolio and Challenge

**Mohawk College Program of Studies**  
 (includes prerequisites and/or equivalents)

New PLA Codes  
 NE-Not Eligible, PCE-Challenge, PPA-Portfolio Assessment, PPD-Portfolio Development Course, PAA-Articulation Agreement, PDE-Demonstration

**533 13-A Chemical Engineering Technology Status-A Req. Grad GPA: 60**

Subj-Crse-Effective Term Course Title Crd Promo Grade/Mode Serv Stat TrigCrS Type Wks Hrs Total Comments PLA

**Sem 5 Semester Promotion GPA: 60**

**Core Courses**

CHEM	10020	201430	Organic Chemistry 2 Lecture	2	50	1	N	A	<input type="checkbox"/>	Lec	14.00	2.50	35.00	
Prereqs: EffTerm - 201430 ( CHEMCH402 Organic Chemistry Or ( CHEM10016 Organic Chemistry And CHEM10017 ) Organic Chemistry														
CHEM	10021	201430	Organic Chemistry 2 Lab	2	50	1	N	A	<input type="checkbox"/>	Lab	14.00	2.50	35.00	
Prereqs: EffTerm - 201430 ( CHEMCH402 Organic Chemistry Or ( CHEM10017 Organic Chemistry And CHEM10016 ) Organic Chemistry														
CHEM	10022	201430	Analytical Chemistry 3 Lecture	2	50	1	N	A	<input type="checkbox"/>	Lec	14.00	2.00	28.00	
Prereqs: EffTerm - 201430 ( CHEM10018 Analytical Chemist And CHEM10019 ) Analytical Chemist Or CHEMCH408 Analytical Chemist														
CHEM	10023	201430	Analytical Chemistry 3 Lab	3	50	1	N	A	<input type="checkbox"/>	Lab	14.00	3.00	42.00	
Prereqs: EffTerm - 201430 ( CHEMCH408 Analytical Chemist Or ( CHEM10018 Analytical Chemist And CHEM10019 ) Analytical Chemist														
INST	10022	201430	Instrumental Analysis 1 Lec	2	50	1	N	A	<input type="checkbox"/>	Lec	14.00	2.00	28.00	
Prereqs: EffTerm - 201430 ( CHEMCH402 Organic Chemistry And CHEMCH408 ) Analytical Chemist Or ( CHEM10016 Organic Chemistry And CHEM10017 Organic Chemistry And CHEM10018 Analytical Chemist And CHEM10019 ) Analytical Chemist														

Promo Grade Modes  
 1- Credit - Percentage/Alpha 4-For Exemption Only  
 2-Credit - RequirementsMet 5-Apprenticeship History  
 3-Non Credit 6-Percent/Alpha-WrkTm

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Old PLA Codes  
 N-Not Eligible, C-Challenge, E-Portfolio or Challenge, P-Portfolio, PC-Combination of Portfolio and Challenge

**Mohawk College Program of Studies**  
 (includes prerequisites and/or equivalents)

New PLA Codes  
 NE-Not Eligible, PCE-Challenge, PPA-Portfolio Assessment, PPD-Portfolio Development Course, PAA-Articulation Agreement, PDE-Demonstration

**533 13-A Chemical Engineering Technology Status-A Req. Grad GPA: 60**

Subj\_Crse-Effective Term Course Title Crd Promo Grade/Mode Serv Stat TriqCrS Type Wks Hrs Total Comments PLA

**Sem 5 Semester Promotion GPA: 60**

Option group 1 Select 1 course(s) from option list below:

BIOL 10019	201430	Envir Biology & Toxicology Lec	2	50	1	N	A	<input type="checkbox"/>	Lec	14.00	2.50	35.00			
										Prereqs:	EffTerm - 201430	(	CHEM10016	Organic Chemistry	
												And	CHEM10017	Organic Chemistry	
												And	CHEM10008	General Chemistry	
												And	CHEM10009	General Chemistry	
												)			
ENVR 10034	201430	Air Pollution Engineering Lec	2	50	1	N	A	<input type="checkbox"/>	Lec	14.00	2.50	35.00			
										Prereqs:	EffTerm - 201430	(	CHEM10008	General Chemistry	
												And	CHEM10009	General Chemistry	
												)			
WAST CY603	201430	Hazardous & Solid Wst Mgt	2	50	1	N	A	<input type="checkbox"/>	Lec	14.00	2.50	35.00			
										Prereqs:	EffTerm - 201430	(	CHEM10016	Organic Chemistry	
												And	CHEM10017	Organic Chemistry	
												Or	(	CHEM10002	Organic Chemistry
												And	ENVR/OH702	Environmental Sci	
												And	ENVR/CY501	Environmental Req	
												Or	CHEM/CH402	Organic Chemistry	

Promo Grade Modes  
 1-Credit - Percentage/Alpha  
 2-Credit - RequirementsMet  
 3-Non Credit  
 4-For Exemption Only  
 5-Apprenticeship History  
 6-Percent/Alpha-WrkTm

Old PLA Codes  
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**Mohawk College Program of Studies**  
 (includes prerequisites and/or equivalents)

New PLA Codes  
 NE-Not Eligible, PCE-Challenge, PPA-Portfolio Assessment, PFD-Portfolio Development Course, PAA-Articulation Agreement, PDE-Demonstration

**533 13-A Chemical Engineering Technology Status-A Req. Grad GPA: 60**

Subj-Crse-Effective Term Course Title Crd Promo Grade/Mode Serv Stat TriqCrs Type Wks Hrs Total Comments PLA

**Sem 6 Semester Promotion GPA: 60**

**Core Courses**

Subj-Crse	Effective Term	Course Title	Crd	Promo	Grade/Mode	Serv	Stat	TriqCrs	Type	Wks	Hrs	Total	Comments	PLA
CHEM 10024	201510	Chemical Engineering 3 Lecture	3	50	1	N	A	<input type="checkbox"/>	Lec	14.00	3.00	42.00	Prereqs: EffTerm - 201510 ( CHEM 10014 Chemical Engineer And CHEM 10015 ) Chemical Engineer Or CHEM 10003 Chemical Engineer	
CHEM 10025	201510	Chemical Engineering 3 Lab	2	50	1	N	A	<input type="checkbox"/>	Lab	14.00	2.50	35.00	Prereqs: EffTerm - 201510 ( CHEM 10014 Chemical Engineer And CHEM 10015 ) Chemical Engineer Or CHEM 10003 Chemical Engineer	

Promo Grade Modes  
 1- Credit - Percentage/Alpha 4-For Exemption Only  
 2-Credit - RequirementsMet 5-Apprenticeship History  
 3-Non Credit 6-Percent/Alpha-WkTm

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Old PLA Codes  
 N-Not Eligible, C-Challenge, E-Portfolio  
 or Challenge, P-Portfolio, PC-  
 Combination of Portfolio and Challenge

**Mohawk College Program of Studies**  
 (includes prerequisites and/or equivalents)

New PLA Codes  
 NE-Not Eligible, PCE-Challenge, PPA-Portfolio  
 Assessment, PPD-Portfolio Development Course, PAA-  
 Articulation Agreement, PDE-Demonstration

**533 13-A Chemical Engineering Technology Status-A Req. Grad GPA: 60**

Subj-Crse-Effective Term Course Title Crd Promo Grade/Mode Serv Stat TriqCrS Type Wks Hrs Total Comments PLA

**Sem 6 Semester Promotion GPA: 60**

Option group 1 Select 4 course(s) from option list below:

ASYS	10010	201510	Comp Applic & PLCs Lecture	2	50	1	N	A	<input type="checkbox"/>	Lec	14.00	2.50	35.00	CHEMICAL STREAM	Prereqs: EffTerm - 201510 ( INST EE359 Instrumentation & Lab&process Auto Or ASYS PH501 )
ASYS	10011	201510	Comp Applic & PLCs Lab	3	50	1	N	A	<input type="checkbox"/>	Lab	14.00	3.00	42.00	CHEMICAL STREAM	Prereqs: EffTerm - 201510 ( INST EE359 Instrumentation & Lab&process Auto Or ASYS PH501 )
ASYS	EE489	200930	PLCs & Automation 1	6	50	1	Y	A	<input type="checkbox"/>	Lec	14.00	3.00	42.00	AUTOMATION STREAM	Prereqs: EffTerm - 200930 ( INST EE359 Instrumentation & Lab&process Auto And MATH10016 ) Math
CADM	10015	200630	CAD Design for Process Automat	3	50	1	Y	A	<input type="checkbox"/>	Lab	14.00	3.00	42.00	AUTOMATION STREAM	
CHEM	10026	201510	Organic Chemistry 3 Lecture	3	50	1	N	A	<input type="checkbox"/>	Lec	14.00	3.00	42.00	CHEMICAL STREAM	Prereqs: EffTerm - 201510 ( CHEM 10020 Organic Chemistry And CHEM 10021 ) Organic Chemistry Or CHEMCH502 Organic Chemistry
CHEM	10027	201510	Organic Chemistry 3 Lab	2	50	1	N	A	<input type="checkbox"/>	Lab	14.00	2.00	28.00	CHEMICAL STREAM	Prereqs: EffTerm - 201510 ( CHEM 10020 Organic Chemistry And CHEM 10021 ) Organic Chemistry Or CHEMCH502 Organic Chemistry

Promo Grade Modes  
 1-Credit - Percentage/Alpha 4-For Exemption Only  
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Old PLA Codes  
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**Mohawk College Program of Studies**  
 (includes prerequisites and/or equivalents)

New PLA Codes  
 NE-Not Eligible, PCE-Challenge, PPA-Portfolio Assessment, PFD-Portfolio Development Course, PAA-Articulation Agreement, PDE-Demonstration

**533 13-A Chemical Engineering Technology Status-A Req. Grad GPA: 60**

Subj-Crse-Effective Term Course Title Crd Promo Grade/Mode Serv Stat TriqCrS Type Wks Hrs Total Comments PLA

**Sem 6 Semester Promotion GPA: 60**

Option group 1 Select 4 course(s) from option list below:

COMP	10101	201030	Computer Programming	6	50	1	Y	A	<input type="checkbox"/>	Lec	14.00	3.00	42.00	AUTOMATION STREAM
										Lab	14.00	3.00		
ENVR	CY501	201610	Environmental Regulation	2	50	1	N	A	<input type="checkbox"/>	Lec	14.00	2.00	28.00	CHEMICAL STREAM-OPTION
										Prereqs: EffTerm - 201610 ( CHEM10006 General Chemistry And CHEM10007 ) General Chemistry Or CHEMPH109 General Chemistry Or ( CHEM10028 Chemistry (Lec) And CHEM10029 ) Chemistry (Lab) Or CHEMCH116 Chemistry				
INST	10024	201510	Instrumental Analysis 2 Lec	2	50	1	N	A	<input type="checkbox"/>	Lec	14.00	2.50	35.00	CHEMICAL STREAM
										Prereqs: EffTerm - 201510 ( INST10022 Instrumental Analy And INST10023 ) Instrumental Analy Or INSTCH507 Instrumental Analy				
INST	10025	201510	Instrumental Analysis 2 Lab	3	50	1	N	A	<input type="checkbox"/>	Lab	14.00	3.00	42.00	CHEMICAL STREAM
										Prereqs: EffTerm - 201510 ( INST10022 Instrumental Analy And INST10023 ) Instrumental Analy Or INSTCH507 Instrumental Analy				
MATH	MA940	200930	Mathematics 4	5	50	1	Y	A	<input type="checkbox"/>	Lec	14.00	5.00	70.00	AUTOMATION STREAM
										Prereqs: EffTerm - 200930 ( MATH10013 Statistics 2 And MATH10016 ) Math				
MGMT	CY602	201610	Environment Project Mgt	2	50	1	N	A	<input type="checkbox"/>	Lec	14.00	2.00	28.00	CHEMICAL STREAM-OPTION
										Prereqs: EffTerm - 201610 ( CHEM10008 General Chemistry And CHEM10009 ) General Chemistry				

Promo Grade Modes  
 1- Credit - Percentage/Alpha  
 2-Credit - RequirementsMet  
 3-Non Credit  
 4-For Exemption Only  
 5-Apprenticeship History  
 6-Percent/Alpha-WrkTm

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Old PLA Codes  
 N-Not Eligible, C-Challenge, E-Portfolio or Challenge, P-Portfolio, PC-Combination of Portfolio and Challenge

**Mohawk College Program of Studies**  
 (includes prerequisites and/or equivalents)

New PLA Codes  
 NE-Not Eligible, PCE-Challenge, PPA-Portfolio Assessment, PPD-Portfolio Development Course, PAA-Articulation Agreement, PCE-Demonstration

**533 13-A Chemical Engineering Technology Status-A Req. Grad GPA: 60**

Subj-Crse-Effective Term    Course Title    Crds    Promo Grade/Mode    Serv    Stat    TrigCrds    Type    Wks    Hrs    Total    Comments    PLA

**Sem 6 Semester Promotion GPA: 60**

**Option group 1 Select 4 course(s) from option list below:**

WAST	10001	201610	Wastewater Engineering Lecture	3	50	1	N	A	<input type="checkbox"/>	Lec	14.00	3.00	42.00	CHEMICAL STREAM-OPTION	
										Prereqs:	EffTerm - 201610	(	CHEM10008	General Chemistry	
											And	CHEM10009	)	General Chemistry	

Promo Grade Modes  
 1-Credit - Percentage/Alpha    4-For Exemption Only  
 2-Credit - RequirementsMet    5-Apprenticeship History  
 3-Non-Credit    6-Percent/Alpha-WrkTrm

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Old PLA Codes  
 N-Not Eligible, C-Challenge, E-Portfolio or Challenge, P-Portfolio, PC-Combination of Portfolio and Challenge

**Mohawk College Program of Studies**  
 (includes prerequisites and/or equivalents)

New PLA Codes  
 NE-Not Eligible, PCE-Challenge, PPA-Portfolio Assessment, PPD-Portfolio Development Course, PAA-Articulation Agreement, PDE-Demonstration

**533 13-A Chemical Engineering Technology Status-A Req. Grad GPA: 60**

Subj-Crse-Effective Term Course Title Crd Promo Grade/Mode Serv Stat TrigCrS Type Wks Hrs Total Comments PLA

**Sem XX Semester Promotion GPA:**

Option group 1 Select 2 course(s) from option list below:

WORK 10030	200810	Work Exp 4 (Chem)	4	2	Y	A	<input type="checkbox"/>	WT	14.00	35.00	490.00
WORK CD992	200810	Work Experience 2	4	2	Y	A	<input type="checkbox"/>	WT	14.00	35.00	490.00
WORK CD993	200810	Work Experience 3	4	2	Y	A	<input type="checkbox"/>	WT	14.00	35.00	490.00
WORK PH991	200810	Work Experience 1	4	2	Y	A	<input type="checkbox"/>	WT	14.00	35.00	490.00

Promo Grade Modes  
 1-Credit - Percentage/Alpha 4-For Exemption Only  
 2-Credit - RequirementsMet 5-Apprenticeship History  
 3-Non Credit 6-Percent/Alpha-WorkTerm

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**Cooperative Education Schedule *Fall 2011***  
**Chemical Engineering Technology (Summer Teaching not shown)**

Year 1			Year 2		
Sep-Dec	Jan-Apr	May-Aug	Sep-Dec	Jan-Apr	May-Aug
Semester 1	Semester 2	Vacation	Semester 3	Semester 4	Work Term 1

Year 3 +				
Sep-Dec	Jan-Apr	May-Aug	Sep-Dec	Jan-Apr
Semester 5	Work Term 2	Work Term 3	Work Term 4	Semester 6

# 453/463 ENVIRONMENTAL TECHNICIAN PROGRAM OF STUDIES (POS)

Please refer to the appropriate Program website for your most recent POS.

Old PLA Codes  
N-Not Eligible, C-Challenge, E-Portfolio or Challenge, P-Portfolio, PC-Combination of Portfolio and Challenge

## Mohawk College Program of Studies (includes prerequisites and/or equivalents)

New PLA Code  
NE-Not Eligible, PCE-Challenge, PPA-Portfolio Assessment, FPD-Portfolio Development Course, PAA-Articulation Agreement, PDE-Demonstration

453/463 13-A Environmental Technician Status-A Req. Grad GPA: 60

Subj-Crse-Effective Term Course Title Crd Promo Grade/Mode Serv Stat TrngCrS Type Wks Hrs Total Comments PLA

### Sem 1 Semester Promotion GPA:

#### Core Courses

CHEM	10028	201230	Chemistry (Lec)	5	50	1	N	A	<input type="checkbox"/>	Lec	14.00	5.00	70.00
CHEM	10029	201230	Chemistry (Lab)	2	50	1	N	A	<input type="checkbox"/>	Lab	14.00	2.50	35.00
CRED	CE106	000000	Intro To Career Education	0		2	N	A	<input type="checkbox"/>	Lec	14.00	0.50	7.00
MATH	10012	200830	Mathematics 1	3	50	1	Y	A	<input type="checkbox"/>	Lec	14.00	3.00	42.00
PHYS	10004	201230	Physical Measurements (Lec)	4	50	1	N	A	<input type="checkbox"/>	Lec	14.00	4.00	56.00
PHYS	10005	201230	Physical Measurements (Lab)	1	50	1	N	A	<input type="checkbox"/>	Lab	14.00	1.00	14.00
SAFE	10037	201230	H&S in Our Environment	2	50	1	N	A	<input type="checkbox"/>	Lec	14.00	2.00	28.00

#### Option group 1 Select 1 course(s) from option list below:

COMM	11040	201230	Communication D	4	50	1	Y	A	<input type="checkbox"/>	Lec	14.00	4.00	56.00	COMM Strategy addition
COMM	LL041	201330	Communication	3	50	1	Y	A	<input type="checkbox"/>	Lec	14.00	3.00	42.00	COMM Strategy addition

Promo Grade Modes  
1-Credit - Percentage/Alpha 4-For Exemption Only  
2-Credit - RequirementsMet 5-Apprenticeship History  
3-Non Credit 6-Percent/Alpha-WrkTm

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Old PLA Codes  
 N-Not Eligible, C-Challenge, E-Portfolio  
 or Challenge, P-Portfolio, PC-  
 Combination of Portfolio and Challenge

**Mohawk College Program of Studies**  
 (includes prerequisites and/or equivalents)

New PLA Codes  
 NE-Not Eligible, PCE-Challenge, PPA-Portfolio  
 Assessment, PPD-Portfolio Development Course, PAA-  
 Articulation Agreement, PDE-Demonstration

453/463 13-A Environmental Technician Status-A Req. Grad GPA: 60

Subj-Crse-Effective Term Course Title Crd Promo Grade/Mode Serv Stat TriqCrS Type Wks Hrs Total Comments PLA

**Sem 2 Semester Promotion GPA:**

**Core Courses**

CHEM 10002	201310	Organic Chemistry - Intro	3	50	1	N	A	<input type="checkbox"/>	Lec	14.00	3.00	42.00	Prereqs: EffTerm - 201310 ( CHEM10028 Chemistry (Lec) And CHEM10029 ) Chemistry (Lab) Or ( CHEM10008 General Chemistry And CHEM10009 ) General Chemistry Or CHEMCH116 Chemistry
CHEM 10010	201310	Analytical Chemistry (Lec)	3	50	1	N	A	<input type="checkbox"/>	Lec	14.00	3.00	42.00	Prereqs: EffTerm - 201310 ( CHEM10006 General Chemistry And CHEM10007 ) General Chemistry Or CHEMPH109 General Chemistry Or ( CHEM10028 Chemistry (Lec) And CHEM10029 ) Chemistry (Lab) Or CHEMCH116 Chemistry
CHEM 10011	201310	Analytical Chemistry (Lab)	3	50	1	N	A	<input type="checkbox"/>	Lab	14.00	3.00	42.00	Prereqs: EffTerm - 201310 ( CHEM10006 General Chemistry And CHEM10007 ) General Chemistry Or CHEMPH109 General Chemistry Or ( CHEM10028 Chemistry (Lec) And CHEM10029 ) Chemistry (Lab) Or CHEMCH116 Chemistry

Promo Grade Modes  
 1- Credit - Percentage/Alpha 4-For Exemption Only  
 2-Credit - RequirementsMet 5-Apprenticeship History  
 3-Non Credit 6-Percent/Alpha-WrkTm

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Old PLA Codes  
 N-Not Eligible, C-Challenge, E-Portfolio  
 or Challenge, P-Portfolio, PC-  
 Combination of Portfolio and Challenge

**Mohawk College Program of Studies**  
 (includes prerequisites and/or equivalents)

New PLA Codes  
 NE-Not Eligible, PCE-Challenge, PPA-Portfolio  
 Assessment, PPD-Portfolio Development Course, PAA-  
 Articulation Agreement, PDE-Demonstration

**453 13-A Environmental Technician Status-A Req. Grad GPA: 60**

Subj-Crse-Effective Term Course Title Crd Promo Grade/Mode Serv Stat TriqCrs Type Wks Hrs Total Comments PLA

**Sem 2 Semester Promotion GPA:**

**Core Courses**

ENVR	CY501	201310	Environmental Regulation	2	50	1	N	A	<input type="checkbox"/>	Lec	14.00	2.00	<b>28.00</b>	Prereqs: EffTerm - 201310 ( CHEM10006 General Chemistry And CHEM10007 ) General Chemistry Or CHEMPH109 General Chemistry Or ( CHEM10028 Chemistry (Lec) And CHEM10029 ) Chemistry (Lab) Or CHEMCH116 Chemistry
ENVR	OH702	201310	Environmental Science	3	50	1	N	A	<input type="checkbox"/>	Lec	14.00	3.00	<b>42.00</b>	Prereqs: EffTerm - 201310 CHEMPE106 Preparatory Chem Or ( CHEM10028 Chemistry (Lec) And CHEM10029 ) Chemistry (Lab) Or ( CHEM10006 General Chemistry And CHEM10007 ) General Chemistry Or CHEMCH116 Chemistry Or CHEMPH109 General Chemistry
INFO	10166	201310	Lab Computer Appl (Lec)	2	50	1	N	A	<input type="checkbox"/>	Lec	14.00	2.00	<b>28.00</b>	
INFO	10167	201310	Lab Computer Applic (Lab)	2	50	1	N	A	<input type="checkbox"/>	Lab	14.00	2.00	<b>28.00</b>	
MATH	10020	200535	Math	3	50	1	Y	A	<input type="checkbox"/>	Lec	14.00	3.00	<b>42.00</b>	Prereqs: EffTerm - 200535 MATHMS147 Mathematics Or MATH10012 Mathematics 1

Promo Grade Modes  
 1-Credit - Percentage/Alpha 4-For Exemption Only  
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 3-Non Credit 6-Percent/Alpha-WrkTm

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Old PLA Codes  
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 or Challenge, P-Portfolio, PC-  
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**Mohawk College Program of Studies**  
 (includes prerequisites and/or equivalents)

New PLA Codes  
 NE-Not Eligible, PCE-Challenge, FPA-Portfolio  
 Assessment, PPD-Portfolio Development Course, PAA-  
 Articulation Agreement, PDE-Demonstration

**453 13-A Environmental Technician Status-A Req. Grad GPA: 60**

Subj Crse Effective Term Course Title Crd Promo Grade/Mode Serv Stat TrigCrs Type Wks Hrs Total Comments PLA

**Sem 3 Semester Promotion GPA:**

**Core Courses**

MATH	MS474	201330	Statistics	3	50	1	N	A	<input type="checkbox"/>	Lec	14.00	3.00	<b>42.00</b>	Prereqs: EffTerm - 201330	( MATHMS173 )	Mathematics
														Or MATH10020	) Math	
														Or MATHMS271	) Mathematics	
STEN	10014	201330	Water Trtmt Techy (Lec)	3	50	1	N	A	<input type="checkbox"/>	Lec	14.00	3.50	<b>49.00</b>	Prereqs: EffTerm - 201330	( CHEM10028 )	Chemistry (Lec)
														And CHEM10029	) Chemistry (Lab)	
														Or CHEMCH116	) Chemistry	
STEN	10015	201330	Water Trtmt Techy (Lab)	2	50	1	N	A	<input type="checkbox"/>	Lab	14.00	2.00	<b>28.00</b>	Prereqs: EffTerm - 201330	( CHEM10028 )	Chemistry (Lec)
														And CHEM10029	) Chemistry (Lab)	
														Or CHEMCH116	) Chemistry	
WAST	10003	201330	Wastewater Techy (Lec)	3	50	1	N	A	<input type="checkbox"/>	Lec	14.00	3.00	<b>42.00</b>	Prereqs: EffTerm - 201330	( CHEM10028 )	Chemistry (Lec)
														And CHEM10029	) Chemistry (Lab)	
														Or CHEMCH116	) Chemistry	
WAST	10004	201330	Wastewater Techy (Lab)	3	50	1	N	A	<input type="checkbox"/>	Lab	14.00	3.00	<b>42.00</b>	Prereqs: EffTerm - 201330	( CHEM10028 )	Chemistry (Lec)
														And CHEM10029	) Chemistry (Lab)	
														Or CHEMCH116	) Chemistry	

Promo Grade Modes  
 1-Credit - Percentage/Alpha  
 2-Credit - RequirementsMet  
 3-Non Credit  
 4-For Exemption Only  
 5-Apprenticeship History  
 6-Percent/Alpha-WrkTm

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Old PLA Codes  
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 or Challenge, P-Portfolio, PC-  
 Combination of Portfolio and Challenge

**Mohawk College Program of Studies**  
 (includes prerequisites and/or equivalents)

New PLA Codes  
 NE-Not Eligible, PCE-Challenge, PPA-Portfolio  
 Assessment, PPD-Portfolio Development Course, PAA-  
 Articulation Agreement, FDE-Demonstration

**453 13-A Environmental Technician Status-A Req. Grad GPA: 60**

Subj-Crse-Effective Term    Course Title    Crds    Promo Grade/Mode    Serv    Stat    TriqCrds    Type    Wks    Hrs    Total    Comments    PLA

**Sem 3 Semester Promotion GPA:**

**Core Courses**

WAST	CY603	201330	Hazardous & Solid Wst Mgt	2	50	1	N	A	<input type="checkbox"/>	Lec	14.00	2.50	<b>35.00</b>			
Prereqs: EffTerm - 201330										(	CHEM 10002	Organic Chemistry				
										And	ENVR OH702	Environmental Sci				
										And	ENVR CY501	Environmental Req				
										Or	(	CHEM 10016	Organic Chemistry			
										And	CHEM 10017	Organic Chemistry				
										Or	CHEMCH402	Organic Chemistry				

**Electives**

OPEL	XXXXX	200430	General Educ 1 Option Table	2		3	Y	A	<input type="checkbox"/>	Lec	13.00	2.00	<b>26.00</b>	
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Promo Grade Modes  
 1-Credit - Percentage/Alpha    4-For Exemption Only  
 2-Credit - RequirementsMet    5-Apprenticeship History  
 3-Non Credit    6-Percent/Alpha-WrkTm

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Old PLA Codes  
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**Mohawk College Program of Studies**  
 (includes prerequisites and/or equivalents)

New PLA Codes  
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**453 13-A Environmental Technician Status-A Req. Grad GPA: 60**

Subj-Crse-Effective Term    Course Title    Crd    Promo Grade/Mode    Serv    Stat    TriqCr    Type    Wks    Hrs    Total    Comments    PLA

**Sem 4 Semester Promotion GPA:**

**Core Courses**

COMM	10265	201410	Critical & Innovative Thinking	2	50	1	Y	A	<input type="checkbox"/>	Lec	14.00	2.00	<b>28.00</b>	COMM10034 Replacmnt		
											Prereqs:	EffTerm - 201410	COMM11040	Communication D		
													Or	COMMLL041	Communications (I	
													Or	COMMLL044	AC - Communicati	
													Or	COMM10187	Commun & Aviatio	
													Or	COMM10288	Written Comm for I	
ENVR	10036	201410	Sampling&Analysis (Lec)	2	50	1	N	A	<input type="checkbox"/>	Lec	14.00	2.50	<b>35.00</b>			
											Prereqs:	EffTerm - 201410	(	CHEM10018	Analytical Chemist	
													And	CHEM10019	Analytical Chemist	
													And	CHEM10016	Organic Chemistry	
													And	CHEM10017	Organic Chemistry	
													And	MATHMS474	Statistics	
													Or	(	CHEM10002	Organic Chemistry
													And	MATHMS372	Statistics 1	
													And	CHEM10010	Analytical Chemist	
													And	CHEM10011	Analytical Chemist	
													Or	(	CHEM10002	Organic Chemistry
													And	MATHMS474	Statistics	
													And	CHEM10010	Analytical Chemist	
													And	CHEM10011	Analytical Chemist	

Promo Grade Modes  
 1-Credit - Percentage/Alpha    4-For Exemption Only  
 2-Credit - RequirementsMet    5-Apprenticeship History  
 3-Non Credit    6-Percent/Alpha-WrkTm

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Old PLA Codes  
 N-Not Eligible, C-Challenge, E-Portfolio or Challenge, P-Portfolio, PC-Combination of Portfolio and Challenge

**Mohawk College Program of Studies**  
 (includes prerequisites and/or equivalents)

New PLA Codes  
 NE-Not Eligible, PCE-Challenge, PPA-Portfolio Assessment, PPD-Portfolio Development Course, PAA-Articulation Agreement, PDE-Demonstration

**453 13-A Environmental Technician Status-A Req. Grad GPA: 60**

Subj-Crse-Effective Term    Course Title    Crd    Promo Grade/Mode    Serv    Stat    TriqCr    Type    Wks    Hrs    Total    Comments    PLA

**Sem 4 Semester Promotion GPA:**

**Core Courses**

ENVR	10037	201410	Sampling&Analysis (Lab)	3	50	1	N	A	<input type="checkbox"/>	Lab	14.00	3.00	<b>42.00</b>							
										Prereqs:				(	CHEM 10018	Analytical Chemist				
															And	CHEM 10019	Analytical Chemist			
															And	CHEM 10016	Organic Chemistry			
															And	CHEM 10017	Organic Chemistry			
															And	MATHMS474	)	Statistics		
															Or	(	CHEM 10002	Organic Chemistry		
															And	MATHMS372	)	Statistics 1		
															And	CHEM 10010	)	Analytical Chemist		
															And	CHEM 10011	)	Analytical Chemist		
															Or	(	CHEM 10002	Organic Chemistry		
															And	MATHMS474	)	Statistics		
															And	CHEM 10010	)	Analytical Chemist		
															And	CHEM 10011	)	Analytical Chemist		
ENVR	10038	201410	Air Monitor&Pollu Ctrl (Lec)	2	50	1	N	A	<input type="checkbox"/>	Lec	14.00	2.50	<b>35.00</b>							
										Prereqs:				(	CHEM 10028	Chemistry (Lec)				
															And	CHEM 10029	Chemistry (Lab)			
															And	MATH 10012	Mathematics 1			
															And	CHEM 10010	)	Analytical Chemist		
															And	CHEM 10011	)	Analytical Chemist		
															Or	(	CHEMCH116	Chemistry		
															And	MATHMS372	)	Statistics 1		
															And	CHEMPH108	)	Analytical Chemist		

Promo Grade Modes  
 1-Credit - Percentage/Alpha    4-For Exemption Only  
 2-Credit - RequirementsMet    5-Apprenticeship History  
 3-Non Credit    6-Percent/Alpha-WrkTm

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Old PLA Codes  
 N-Not Eligible, C-Challenge, E-Portfolio  
 or Challenge, P-Portfolio, PC-  
 Combination of Portfolio and Challenge

**Mohawk College Program of Studies**  
 (includes prerequisites and/or equivalents)

New PLA Codes  
 NE-Not Eligible, PCE-Challenge, PPA-Portfolio  
 Assessment, PPD-Portfolio Development Course, PAA-  
 Articulation Agreement, PDE-Demonstration

453 13-A Environmental Technician Status-A Req. Grad GPA: 60

Subj-Crse-Effective Term Course Title Crd Promo Grade/Mode Serv Stat TriqCrS Type Wks Hrs Total Comments PLA

**Sem 4 Semester Promotion GPA:**

**Core Courses**

ENVR	10039	201410	Air Monitor& Pollu Ctrl (Lab)	2	50	1	N	A	<input type="checkbox"/>	Lab	14.00	2.00	28.00	Prereqs: EffTerm - 201410 ( CHEM 10028 Chemistry (Lec) And CHEM 10029 Chemistry (Lab) And MATH 10012 Mathematics 1 And CHEM 10010 Analytical Chemist And CHEM 10011 ) Analytical Chemist Or ( CHEM CH116 Chemistry And MATHMS372 Statistics 1 And CHEMPH108 ) Analytical Chemist
QUAL	CY404	201310	Envir Projects&ISO14000	4	50	1	N	A	<input type="checkbox"/>	Lec	14.00	4.00	56.00	Prereqs: EffTerm - 201310 ( ENVR CY501 Environmental Reg And WAST CY302 Wastewater Techn And WAST CY603 ) Hazardous & Solid
WAST	10005	201330	Ind. WW Trtmnt Proc(Lec)	3	50	1	N	A	<input type="checkbox"/>	Lec	14.00	3.00	42.00	Prereqs: EffTerm - 201330 ( WAST CY603 Hazardous & Solid And WAST 10003 Wastewater Techy And WAST 10004 ) Wastewater Techy
WAST	10006	201330	Ind. WW Trtmnt Proc (Lab)	3	50	1	N	A	<input type="checkbox"/>	Lab	14.00	3.00	42.00	Prereqs: EffTerm - 201330 ( WAST CY603 Hazardous & Solid And WAST 10003 Wastewater Techy And WAST 10004 ) Wastewater Techy

Promo Grade Modes  
 1-Credit - Percentage/Alpha 4-For Exemption Only  
 2-Credit - RequirementsMet 5-Apprenticeship History  
 3-Non Credit 6-Percent/Alpha-WrkTm .

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# 369/669 BIOTECHNOLOGY PROGRAM OF STUDIES (POS)

Please refer to the appropriate Program website for your most recent POS.

**Old PLA Codes**  
 N-Not Eligible, C-Challenge, E-Portfolio  
 or Challenge, P-Portfolio, PC-  
 Combination of Portfolio and Challenge

## Mohawk College Program of Studies (includes prerequisites and/or equivalents)

**New PLA Codes**  
 NE-Not Eligible, PCE-Challenge, PPA-Portfolio  
 Assessment, PPD-Portfolio Development Course, PAA-  
 Articulation Agreement, POC-Demonstration

**369 13-A Biotechnology Status-A Req. Grad GPA: 60**

Subj-Crse-Effective Term	Course Title	Crd	Promo Grade/Mode	Serv	Stat	TrioCr	Type	Wks	Hrs	Total	Comments	PLA
<b>Sem 1 Semester Promotion GPA: 60</b>												
<b>Core Courses</b>												
CHYM 10028	201230 Chemistry (Lec)	5	50	1	N	A	<input type="checkbox"/>	Lec	14.00	5.00	70.00	
CHYM 10029	201230 Chemistry (Lab)	2	50	1	N	A	<input type="checkbox"/>	Lab	14.00	2.50	35.00	
CRMD CB106	000000 Intro To Career Education	0		2	N	A	<input type="checkbox"/>	Lec	14.00	0.50	7.00	
MATH 10012	200830 Mathematics 1	3	50	1	Y	A	<input type="checkbox"/>	Lec	14.00	3.00	42.00	
PHYS 10004	201230 Physical Measurements (Lec)	4	50	1	N	A	<input type="checkbox"/>	Lec	14.00	4.00	56.00	
PHYS 10005	201230 Physical Measurements (Lab)	1	50	1	N	A	<input type="checkbox"/>	Lab	14.00	1.00	14.00	
SAFB 10037	201230 H&S in Our Environment	2	50	1	N	A	<input type="checkbox"/>	Lec	14.00	2.00	28.00	
<b>Option group 1 Select 1 course(s) from option list below:</b>												
COMM 11040	201230 Communication D	4	50	1	Y	A	<input type="checkbox"/>	Lec	14.00	4.00	56.00	COMM Strategy addition
COMM LL041	201330 Communication	3	50	1	Y	A	<input type="checkbox"/>	Lec	14.00	3.00	42.00	COMM Strategy addition

**Promo Grade Modes**  
 1-Credit - Percentage/Alpha  
 2-Credit - RequirementsMet  
 3-Non Credit  
 4-For Exemption Only  
 5-Apprenticeship History  
 6-Percent/Alpha-Wk/Tm

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**Old PLA Codes**  
 N-Not Eligible, C-Challenge, E-Portfolio or Challenge, P-Portfolio, PC-Combination of Portfolio and Challenge

**Mohawk College Program of Studies**  
 (includes prerequisites and/or equivalents)

**New PLA Codes**  
 NE-Not Eligible, PCE-Challenge, PPA-Portfolio Assessment, PPD-Portfolio Development Course, PAA-Articulation Agreement, PDE-Demonstration

**369 13-A Biotechnology Status-A Req. Grad GPA: 60**

Subj-Crse-Effective Term Course Title Crd Promo Grade/Mode Serv Stat TrinCrS Type Wks Hrs Total Comments PLA

**Sem 2 Semester Promotion GPA: 60**

**Core Courses**

BIOL 10015	201310	Biotechnology 1 (Lec)	3	50	1	N	A	<input type="checkbox"/>	Lec	14.00	3.00	42.00	
Prereqs: EITerm - 201310 ( CHEM 10028 Chemistry (Lec)													
And CHEM 10029 ) Chemistry (Lab)													
Or CHEMCH116 Chemistry													
BIOL 10016	201310	Biotechnology 1 (Lab)	2	50	1	N	A	<input type="checkbox"/>	Lab	14.00	2.00	28.00	
Prereqs: EITerm - 201310 ( CHEM 10028 Chemistry (Lec)													
And CHEM 10029 ) Chemistry (Lab)													
Or CHEMCH116 Chemistry													
BIOL 10017	201310	Cell Biology (Lec)	3	50	1	N	A	<input type="checkbox"/>	Lec	14.00	3.00	42.00	
Prereqs: EITerm - 201310 ( CHEM 10028 Chemistry (Lec)													
And CHEM 10029 ) Chemistry (Lab)													
Or CHEMCH116 Chemistry													
Or CHEMPE106 Preparatory Chem													
BIOL 10018	201310	Cell Biology (Lab)	1	50	1	N	A	<input type="checkbox"/>	Lab	14.00	1.00	14.00	
Prereqs: EITerm - 201310 ( CHEM 10028 Chemistry (Lec)													
And CHEM 10029 ) Chemistry (Lab)													
Or CHEMCH116 Chemistry													
Or CHEMPE106 Preparatory Chem													
CHEM 10002	201310	Organic Chemistry - Intro	3	50	1	N	A	<input type="checkbox"/>	Lec	14.00	3.00	42.00	
Prereqs: EITerm - 201310 ( CHEM 10028 Chemistry (Lec)													
And CHEM 10029 ) Chemistry (Lab)													
Or ( CHEM 10008 General Chemistry													
And CHEM 10009 ) General Chemistry													
Or CHEMCH116 Chemistry													

**Promo Grade Modes**  
 1-Credit - Percentage/Alpha 4-For Exemption Only  
 2-Credit - RequirementsMet 5-Apprenticeship History  
 3-Non-Credit 6-Percent/Alpha-Wk/Trm

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**Old PLA Codes**  
 N-Not Eligible, C-Challenge, E-Portfolio or Challenge, P-Portfolio, PC-Combination of Portfolio and Challenge

**Mohawk College Program of Studies**  
 (includes prerequisites and/or equivalents)

**New PLA Codes**  
 NE-Not Eligible, PCE-Challenge, PPA-Portfolio Assessment, PPD-Portfolio Development Course, PAA-Articulation Agreement, PDE-Demonstration

**369 13-A Biotechnology Status-A Req. Grad GPA: 60**

Subj-Crse-Effective Term      Course Title      Crds   Promo Grade/Mode   Serv   Stat   TrinCr   Type      Wks   Hrs      Total   Comments                      PLA

**Sem 2 Semester Promotion GPA: 60**

**Core Courses**

<b>CHEM</b>	<b>10010</b>	<b>201310</b>	Analytical Chemistry (Lec)	3	50	1	N	A	<input type="checkbox"/>	Lec	14.00	3.00	<b>42.00</b>			
										Prereqs:	<b>ENTerm - 201310</b>	(	CHEM 10006	General Chemistry		
												And	CHEM 10007	) General Chemistry		
												Or	CHEMPH109	General Chemistry		
												Or	( CHEM 10028	Chemistry (Lec)		
												And	CHEM 10029	) Chemistry (Lab)		
												Or	CHEMCH116	Chemistry		
<b>CHEM</b>	<b>10011</b>	<b>201310</b>	Analytical Chemistry (Lab)	3	50	1	N	A	<input type="checkbox"/>	Lab	14.00	3.00	<b>42.00</b>			
										Prereqs:	<b>ENTerm - 201310</b>	(	CHEM 10006	General Chemistry		
												And	CHEM 10007	) General Chemistry		
												Or	CHEMPH109	General Chemistry		
												Or	( CHEM 10028	Chemistry (Lec)		
												And	CHEM 10029	) Chemistry (Lab)		
												Or	CHEMCH116	Chemistry		
<b>MATH</b>	<b>10020</b>	<b>200535</b>	Math	3	50	1	Y	A	<input type="checkbox"/>	Lec	14.00	3.00	<b>42.00</b>			
										Prereqs:	<b>ENTerm - 200535</b>		MATHMS147	Mathematics		
												Or	MATH 10012	Mathematics 1		

**Promo Grade Modes**  
 1-Credit - Percentage/Alpha      4-For Exemption Only  
 2-Credit - RequirementsMet      5-Apprenticeship History  
 3-Non-Credit                              6-Percent/Alpha-Wk/Trm

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**Old PLA Codes**  
 N-Not Eligible, C-Challenge, E-Portfolio or Challenge, P-Portfolio, PC-Combination of Portfolio and Challenge

**Mohawk College Program of Studies**  
 (includes prerequisites and/or equivalents)

**New PLA Codes**  
 NE-Not Eligible, PCE-Challenge, PPA-Portfolio Assessment, PPD-Portfolio Development Course, PAA-Articulation Agreement, PDE-Demonstration

**369 13-A Biotechnology Status-A Req. Grad GPA: 60**

Subj-Crse-Effective Term    Course Title    Crd    Promo Grade/Mode    Serv    Stat    TrinCr    Type    Wks    Hrs    Total    Comments    PLA

**Sem 3 Semester Promotion GPA: 60**

**Core Courses**

BIOL 10023	201330	Biotech Unit Opera (Lec)	2	50	1	N	A	<input type="checkbox"/>	Lec	14.00	2.50	35.00	
Prereqs: <b>ENTerm - 201330</b> ( BIOL 10015 Biotechnology 1 (L And BIOL 10016 Biotechnology 1 (L And MATH 10020 ) Math Or ( BIOL 10000 Biotechnology 1 And MATH 10020 ) Math													
BIOL 10024	201330	Biotech Unit Oper (Lab)	2	50	1	N	A	<input type="checkbox"/>	Lab	14.00	2.50	35.00	
Prereqs: <b>ENTerm - 201330</b> ( BIOL 10015 Biotechnology 1 (L And BIOL 10016 Biotechnology 1 (L And MATH 10020 ) Math Or ( BIOL 10000 Biotechnology 1 And MATH 10020 ) Math													
BSCI 10161	201330	Microbiology (Lec)	3	50	1	N	A	<input type="checkbox"/>	Lec	14.00	3.00	42.00	
Prereqs: <b>ENTerm - 201330</b> ( BIOL 10017 Cell Biology (Lec) And BIOL 10018 ) Cell Biology (Lab) Or BIOL 10001 Cell Biology													
BSCI 10162	201330	Microbiology (Lab)	2	50	1	N	A	<input type="checkbox"/>	Lab	14.00	2.00	28.00	
Prereqs: <b>ENTerm - 201330</b> ( BIOL 10017 Cell Biology (Lec) And BIOL 10018 ) Cell Biology (Lab) Or BIOL 10001 Cell Biology													

**Promo Grade Modes**  
 1-Credit - Percentage/Alpha    4-For Exemption Only  
 2-Credit - Requirements Met    5-Apprenticeship History  
 3-Non-Credit    6-Percent/Alpha-Wk/Tm

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**Old PLA Codes**

N-Not Eligible, C-Challenge, E-Portfolio or Challenge, P-Portfolio, PC-Combination of Portfolio and Challenge

**Mohawk College Program of Studies**

**(includes prerequisites and/or equivalents)**

**New PLA Codes**

NE-Not Eligible, PCE-Challenge, PPA-Portfolio Assessment, PPD-Portfolio Development Course, PAA-Articulation Agreement, PDE-Demonstration

**369 13-A Biotechnology Status-A Req. Grad GPA: 60**

Subj-Crse-Effective Term Course Title Crd Promo Grade/Mode Serv Stat TrinCrS Type Wks Hrs Total Comments PLA

**Sem 3 Semester Promotion GPA: 60**

**Core Courses**

INST	10026	201330	Biochem Proc Instrum (Lec)	2	50	1	N	A	<input type="checkbox"/>	Lec	14.00	2.50	35.00		
										Prereqs:	EITerm -201330	(	BIOL 10015	Biotechnology 1 (L	
												And	BIOL 10016	Biotechnology 1 (L	
												And	PHYS 10004	Physical Measurer	
												And	PHYS 10005	Physical Measurer	
												Or	( BIOL 10000	Biotechnology 1	
												And	PHYS PH123	Physical Measurer	
												)			
INST	10027	201330	Biochem Proc Instrum (Lab)	2	50	1	N	A	<input type="checkbox"/>	Lab	14.00	2.00	28.00		
										Prereqs:	EITerm -201330	(	BIOL 10015	Biotechnology 1 (L	
												And	BIOL 10016	Biotechnology 1 (L	
												And	PHYS 10004	Physical Measurer	
												And	PHYS 10005	Physical Measurer	
												Or	( BIOL 10000	Biotechnology 1	
												And	PHYS PH123	Physical Measurer	
												)			
MATH	MS474	201330	Statistics	3	50	1	N	A	<input type="checkbox"/>	Lec	14.00	3.00	42.00		
										Prereqs:	EITerm -201330		MATHMS173	Mathematics	
												Or	MATH 10020	Math	
												Or	MATHMS271	Mathematics	
QUAL	10000	201330	Quality Assurance Systems	3	50	1	N	A	<input type="checkbox"/>	Lec	14.00	3.00	42.00		
										Prereqs:	EITerm -201330	(	CHEM 10010	Analytical Chemist	
												And	CHEM 10011	Analytical Chemist	
												Or	CHEMPH108	Analytical Chemist	

**Promo Grade Modes**

1-Credit - Percentage/Alpha  
2-Credit - RequirementsMet  
3-Non Credit  
4-For Exemption Only  
5-Apprenticeship History  
6-Percent/Alpha-WorkTrm

**Old PLA Codes**  
 N-Not Eligible, C-Challenge, E-Portfolio or Challenge, P-Portfolio, PC-Combination of Portfolio and Challenge

**Mohawk College Program of Studies**  
 (includes prerequisites and/or equivalents)

**New PLA Codes**  
 NE-Not Eligible, PCE-Challenge, PPA-Portfolio Assessment, PPD-Portfolio Development Course, PAA-Articulation Agreement, PDE-Demonstration

**369 13-A Biotechnology Status-A Req. Grad GPA: 60**

Subj-Crse-Effective Term	Course Title	Crd	Promo Grade/Mode	Serv	Stat	TrinCrsc	Type	Wks	Hrs	Total	Comments	PLA
<b>Sem 3 Semester Promotion GPA: 60</b>												
<b>Electives</b>												
OPBL XXXXX	200430 General Educ 1 Option Table	2	3	Y	A	<input type="checkbox"/>	Lec	13.00	2.00	26.00		

**Promo Grade Modes**  
 1-Credit - Percentage/Alpha  
 2-Credit - RequirementsMet  
 3-Non Credit  
 4-For Exemption Only  
 5-Apprenticeship History  
 6-Percent/Alpha-Wk/Tm

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**Old PLA Codes**  
 N-Not Eligible, C-Challenge, E-Portfolio or Challenge, P-Portfolio, PC-Combination of Portfolio and Challenge

**Mohawk College Program of Studies**  
 (includes prerequisites and/or equivalents)

**New PLA Codes**  
 NE-Not Eligible, PCE-Challenge, PPA-Portfolio Assessment, PPD-Portfolio Development Course, PAA-Articulation Agreement, PDE-Demonstration

**369 13-A Biotechnology Status-A Req. Grad GPA: 60**

Subj-Crse-Effective Term Course Title Crd Promo Grade/Mode Serv Stat TrinCrS Type Wks Hrs Total Comments PLA

**Sem 4 Semester Promotion GPA: 60**

**Core Courses**

Subj	Crse	Effective Term	Course Title	Crd	Promo	Grade/Mode	Serv	Stat	TrinCrS	Type	Wks	Hrs	Total	Comments	PLA
MNR	10036	201410	Sampling&Analysis (Lec)	2	50	1	N	A		Lec	14.00	2.50	35.00		
Prereqs: ENTerm - 201410 ( CHEM 10018 Analytical Chemist															
And CHEM 10019 Analytical Chemist															
And CHEM 10016 Organic Chemistry															
And CHEM 10017 Organic Chemistry															
And MATHMS474 ) Statistics															
Or ( CHEM 10002 Organic Chemistry															
And MATHMS372 Statistics 1															
And CHEM 10010 Analytical Chemist															
And CHEM 10011 ) Analytical Chemist															
Or ( CHEM 10002 Organic Chemistry															
And MATHMS474 Statistics															
And CHEM 10010 Analytical Chemist															
And CHEM 10011 ) Analytical Chemist															
MNR	10037	201410	Sampling&Analysis (Lab)	3	50	1	N	A		Lab	14.00	3.00	42.00		
Prereqs: ENTerm - 201410 ( CHEM 10018 Analytical Chemist															
And CHEM 10019 Analytical Chemist															
And CHEM 10016 Organic Chemistry															
And CHEM 10017 Organic Chemistry															
And MATHMS474 ) Statistics															
Or ( CHEM 10002 Organic Chemistry															
And MATHMS372 Statistics 1															
And CHEM 10010 Analytical Chemist															
And CHEM 10011 ) Analytical Chemist															
Or ( CHEM 10002 Organic Chemistry															
And MATHMS474 Statistics															
And CHEM 10010 Analytical Chemist															
And CHEM 10011 ) Analytical Chemist															

**Promo Grade Modes**  
 1-Credit - Percentage/Alpha 4-For Exemption Only  
 2-Credit - RequirementsMet 5-Apprenticeship History  
 3-Non-Credit 6-Percent/Alpha-WorkTrm





# 370/670 BIOTECHNOLOGY (HEALTH) PROGRAM OF STUDIES (POS)

Please refer to the appropriate Program website for your most recent POS.

Old PLA Codes		<b>Mohawk College Program of Studies</b>										New PLA Codes		
N-Not Eligible, C-Challenge, E-Portfolio or Challenge, F-Portfolio, FC-Combination of Portfolio and Challenge		<b>(includes prerequisites and/or equivalents)</b>										NE-Not Eligible, PCE-Challenge, PPA-Portfolio Assessment, PPD-Portfolio Development Course, PAA-Articulation Agreement, PDE-Demonstration		
370/670 13-A Biotechnology (Health) Status-A Req. Grad GPA: 60												PLA		
Subj.	Crse.	Effective Term	Course Title	Crds	Promo Grade/Mode	Serv	Stat	Triq	Crs	Type	Wks	Hrs	Total	Comments
<b>Sem 1 Semester Promotion GPA: 60</b>														
<b>Core Courses</b>														
CHEM	10028	201230	Chemistry (Lec)	5	50	1	N	A	<input type="checkbox"/>	Lec	14.00	5.00	70.00	
CHEM	10029	201230	Chemistry (Lab)	2	50	1	N	A	<input type="checkbox"/>	Lab	14.00	2.50	35.00	
CREC	CE106	000000	Intro To Career Education	0		2	N	A	<input type="checkbox"/>	Lec	14.00	0.50	7.00	
MATH	10012	200830	Mathematics 1	3	50	1	Y	A	<input type="checkbox"/>	Lec	14.00	3.00	42.00	
PHYS	10004	201230	Physical Measurements (Lec)	4	50	1	N	A	<input type="checkbox"/>	Lec	14.00	4.00	56.00	
PHYS	10005	201230	Physical Measurements (Lab)	1	50	1	N	A	<input type="checkbox"/>	Lab	14.00	1.00	14.00	
SAFE	10037	201230	H&S in Our Environment	2	50	1	N	A	<input type="checkbox"/>	Lec	14.00	2.00	28.00	
<b>Option group 1 Select 1 course(s) from option list below:</b>														
COMM	11040	201230	Communication D	4	50	1	Y	A	<input type="checkbox"/>	Lec	14.00	4.00	56.00	COMM Strategy addition
COMM	LL041	201330	Communication	3	50	1	Y	A	<input type="checkbox"/>	Lec	14.00	3.00	42.00	COMM Strategy addition

Promo Grade Modes	1-Credit - Percentage/Alpha	4-For Exemption Only
	2-Credit - Requirements Met	5-Apprenticeship History
	3-Non Credit	6-Percent/Alpha-Wk/Tm

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Old PLA Codes  
 N-Not Eligible, C-Challenge, E-Portfolio or Challenge, P-Portfolio, PC-Combination of Portfolio and Challenge

**Mohawk College Program of Studies**  
 (includes prerequisites and/or equivalents)

New PLA Codes  
 NE-Not Eligible, PCE-Challenge, PFA-Portfolio Assessment, PPD-Portfolio Development Course, PAA-Articulation Agreement, PDE-Demonstration

**370/670 13-A Biotechnology (Health) Status-A Req. Grad GPA: 60**

Subj-Crse-Effective Term Course Title Crd Promo Grade/Mode Serv Stat TrigCrS Type Wks Hrs Total Comments PLA

**Sem 2 Semester Promotion GPA: 60**

**Core Courses**

BIOL 10015	201310	Biotechnology 1 (Lec)	3	50	1	N	A	<input type="checkbox"/>	Lec	14.00	3.00	42.00	
Prereqs: EffTerm - 201310 ( CHEM10028 Chemistry (Lec)													
And CHEM10029 ) Chemistry (Lab)													
Or CHEMCH116 Chemistry													
BIOL 10016	201310	Biotechnology 1 (Lab)	2	50	1	N	A	<input type="checkbox"/>	Lab	14.00	2.00	28.00	
Prereqs: EffTerm - 201310 ( CHEM10028 Chemistry (Lec)													
And CHEM10029 ) Chemistry (Lab)													
Or CHEMCH116 Chemistry													
BIOL 10017	201310	Cell Biology (Lec)	3	50	1	N	A	<input type="checkbox"/>	Lec	14.00	3.00	42.00	
Prereqs: EffTerm - 201310 ( CHEM10028 Chemistry (Lec)													
And CHEM10029 ) Chemistry (Lab)													
Or CHEMCH116 Chemistry													
Or CHEMPE106 Preparatory Chem													
BIOL 10018	201310	Cell Biology (Lab)	1	50	1	N	A	<input type="checkbox"/>	Lab	14.00	1.00	14.00	
Prereqs: EffTerm - 201310 ( CHEM10028 Chemistry (Lec)													
And CHEM10029 ) Chemistry (Lab)													
Or CHEMCH116 Chemistry													
Or CHEMPE106 Preparatory Chem													
CHEM 10002	201310	Organic Chemistry - Intro	3	50	1	N	A	<input type="checkbox"/>	Lec	14.00	3.00	42.00	
Prereqs: EffTerm - 201310 ( CHEM10028 Chemistry (Lec)													
And CHEM10029 ) Chemistry (Lab)													
Or ( CHEM10008 General Chemistry													
And CHEM10009 ) General Chemistry													
Or CHEMCH116 Chemistry													

Promo Grade Modes  
 1-Credit - Percentage/Alpha 4-For Exemption Only  
 2-Credit - RequirementsMet 5-Apprenticeship History  
 3-Non Credit 6-Percent/Alpha-WrkTm

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Old PLA Codes  
 N-Not Eligible, C-Challenge, E-Portfolio or Challenge, P-Portfolio, PC-Combination of Portfolio and Challenge

**Mohawk College Program of Studies**  
 (includes prerequisites and/or equivalents)

New PLA Codes  
 NE-Not Eligible, PCE-Challenge, PPA-Portfolio Assessment, PPD-Portfolio Development Course, PAA-Articulation Agreement, PDE-Demonstration

**370/670 13-A Biotechnology (Health) Status-A Req. Grad GPA: 60**

Subj-Crse-Effective Term      Course Title      Crds Promo Grade/Mode Serv Stat TrigCr Type      Wks Hrs      Total Comments

**Sem 2 Semester Promotion GPA: 60**

**Core Courses**

CHEM	10010	201310	Analytical Chemistry (Lec)	3	50	1	N	A	<input type="checkbox"/>	Lec	14.00	3.00	<b>42.00</b>	
										Prereqs:	EffTerm - 201310	(	CHEM10006	General Che
												And	CHEM10007	) General Che
												Or	CHEMPH109	General Che
												Or	( CHEM10028	Chemistry (L
												And	CHEM10029	) Chemistry (L
												Or	CHEMCH116	Chemistry
CHEM	10011	201310	Analytical Chemistry (Lab)	3	50	1	N	A	<input type="checkbox"/>	Lab	14.00	3.00	<b>42.00</b>	
										Prereqs:	EffTerm - 201310	(	CHEM10006	General Che
												And	CHEM10007	) General Che
												Or	CHEMPH109	General Che
												Or	( CHEM10028	Chemistry (L
												And	CHEM10029	) Chemistry (L
												Or	CHEMCH116	Chemistry
MATH	10020	200535	Math	3	50	1	Y	A	<input type="checkbox"/>	Lab	14.00	3.00	<b>42.00</b>	
										Prereqs:	EffTerm - 200535		MATHMS147	Mathematics
												Or	MATH10012	Mathematics

Promo Grade Modes      1-Credit - Percentage/Alpha      4-For Exemption Only  
 2-Credit - RequirementsMet      5-Apprenticeship History  
 3-Non Credit      6-Placement/Inhs/WWTm

Old PLA Codes  
 N-Not Eligible, C-Challenge, E-Portfolio or Challenge, P-Portfolio, PC-Combination of Portfolio and Challenge

**Mohawk College Program of Studies**  
 (includes prerequisites and/or equivalents)

New PLA Codes  
 NE-Not Eligible, PCE-Challenge, PPA-Portfolio Assessment, PPD-Portfolio Development Course, PAA-Articulation Agreement, PDE-Demonstration

**370/670 13-A Biotechnology (Health) Status-A Req. Grad GPA: 60**

Subj-Crse-Effective Term    Course Title    Crd    Promo Grade/Mode    Serv    Stat    TrigCr    Type    Wks    Hrs    Total    Comments    PLA

**Sem 3 Semester Promotion GPA: 60**

**Core Courses**

BIOL 10008	201330	Intro to Forensic Science	2	50	1	N	A	<input type="checkbox"/>	Lec	14.00	2.50	<b>35.00</b>	Prereqs: EffTerm - 201330 ( BIOL 10015 Biotechnology 1 (L And BIOL 10016 Biotechnology 1 (L And BIOL 10017 Cell Biology (Lec) And BIOL 10018 ) Cell Biology (Lab) Or ( BIOL 10000 Biotechnology 1 And BIOL 10001 ) Cell Biology
BIOL 10012	201330	Physiological Sciences	4	50	1	Y	A	<input type="checkbox"/>	Lec	14.00	3.00	<b>42.00</b>	
					1		A	<input type="checkbox"/>	Lab	14.00	1.00	<b>14.00</b>	Prereqs: EffTerm - 201330 ( BIOL 10017 Cell Biology (Lec) And BIOL 10018 ) Cell Biology (Lab) Or BIOL 10001 Cell Biology
HSCI 10161	201330	Microbiology (Lec)	3	50	1	N	A	<input type="checkbox"/>	Lec	14.00	3.00	<b>42.00</b>	Prereqs: EffTerm - 201330 ( BIOL 10017 Cell Biology (Lec) And BIOL 10018 ) Cell Biology (Lab) Or BIOL 10001 Cell Biology
HSCI 10162	201330	Microbiology (Lab)	2	50	1	N	A	<input type="checkbox"/>	Lab	14.00	2.00	<b>28.00</b>	Prereqs: EffTerm - 201330 ( BIOL 10017 Cell Biology (Lec) And BIOL 10018 ) Cell Biology (Lab) Or BIOL 10001 Cell Biology
MATH MS474	201330	Statistics	3	50	1	Y	A	<input type="checkbox"/>	Lec	14.00	3.00	<b>42.00</b>	Prereqs: EffTerm - 201330 MATHMS173 Mathematics Or MATH 10020 Math Or MATHMS271 Mathematics

Promo Grade Modes  
 1- Credit - Percentage/Alpha    4-For Exemption Only  
 2-Credit - RequirementsMet    5-Apprenticeship History  
 3-Non Credit    6-Percent/Alpha-WrkTm

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Old PLA Codes  
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**Mohawk College Program of Studies**  
 (includes prerequisites and/or equivalents)

New PLA Codes  
 NE-Not Eligible, PCE-Challenge, PPA-Portfolio Assessment, PPD-Portfolio Development Course, PAA-Articulation Agreement, PDE-Demonstration

**370/670 13-A Biotechnology (Health) Status-A Req. Grad GPA: 60**

Subj-Crse-Effective Term    Course Title    Crd    Promo Grade/Mode    Serv    Stat    TriqCr    Type    Wks    Hrs    Total    Comments    PLA

**Sem 3 Semester Promotion GPA: 60**

**Core Courses**

QUAL	10000	201330	Quality Assurance Systems	3	50	1	N	A	<input type="checkbox"/>	Lec	14.00	3.00	<b>42.00</b>	
										Prereqs:	EffTerm - 201330	(	CHEM 10010	Analytical Chemist
												And	CHEM 10011	Analytical Chemist
												Or	CHEMPH108	Analytical Chemist

**Electives**

OPBL	XXXXX	200430	General Educ 1 Option Table	2		3	Y	A	<input type="checkbox"/>	Lec	13.00	2.00	<b>26.00</b>	
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Promo Grade Modes  
 1-Credit - Percentage/Alpha    4-For Exemption Only  
 2-Credit - RequirementsMet    5-Apprenticeship History  
 3-Non Credit    6-Percent/Alpha-WrkTm .

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Old PLA Codes  
 N-Not Eligible, C-Challenge, E-Portfolio  
 or Challenge, P-Portfolio, PC-  
 Combination of Portfolio and Challenge

**Mohawk College Program of Studies**  
 (includes prerequisites and/or equivalents)

New PLA Codes  
 NE-Not Eligible, PCE-Challenge, PPA-Portfolio  
 Assessment, PPD-Portfolio Development Course, PAA-  
 Articulation Agreement, PDE-Demonstration

**370/670 13-A Biotechnology (Health) Status-A Req. Grad GPA: 60**

Subj-Crse-Effective Term Course Title Crd Promo Grade/Mode Serv Stat TrngCrS Type Wks Hrs Total Comments PLA

**Sem 4 Semester Promotion GPA: 60**

**Core Courses**

BIOL 10009	201410	Biomedical	4	50	1	N	A	<input type="checkbox"/>	Lec	14.00	2.00	28.00		
					1		A	<input type="checkbox"/>	Lab	14.00	2.00	28.00		
									Prereqs:	EffTerm - 201410	(	BIOL10012	) Physiological Scie	
BIOL 10010	201410	Biopharmaceuticals	2	50	1	N	A	<input type="checkbox"/>	Lec	14.00	2.50	35.00		
									Prereqs:	EffTerm - 201410	(	HSCI10161	) Microbiology (Lec)	
											And	HSCI10162	) Microbiology (Lab)	
											And	CHEM10010	) Analytical Chemist	
											And	CHEM10011	) Analytical Chemist	
											Or	(	HSCI10021	) Microbiology
											And	CHEMPH108	) Analytical Chemist	
BIOL 10025	201410	Biotechnology 2 (Lec)	3	50	1	N	A	<input type="checkbox"/>	Lec	14.00	3.00	42.00		
									Prereqs:	EffTerm - 201410	(	BIOL10015	) Biotechnology 1 (L	
											And	BIOL10016	) Biotechnology 1 (L	
											Or	BIOL10000	) Biotechnology 1	
BIOL 10026	201410	Biotechnology 2 (Lab)	2	50	1	N	A	<input type="checkbox"/>	Lab	14.00	2.00	28.00		
									Prereqs:	EffTerm - 201410	(	BIOL10015	) Biotechnology 1 (L	
											And	BIOL10016	) Biotechnology 1 (L	
											Or	BIOL10000	) Biotechnology 1	
CHEM 10000	201410	Biochemistry	4	50	1	N	A	<input type="checkbox"/>	Lec	14.00	3.00	42.00		
									Prereqs:	EffTerm - 201410	(	BIOL10017	) Cell Biology (Lec)	
											And	BIOL10018	) Cell Biology (Lab)	
											And	CHEM10002	) Organic Chemistry	
											Or	(	BIOL10001	) Cell Biology
											And	CHEM10002	) Organic Chemistry	

Promo Grade Modes  
 1- Credit - Percentage/Alpha  
 2- Credit - RequirementsMet  
 3- Non Credit  
 4- For Exemption Only  
 5- Apprenticeship History  
 6- Percent/Alpha-WrkTm

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Old PLA Codes  
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**Mohawk College Program of Studies**  
 (includes prerequisites and/or equivalents)

New PLA Codes  
 NE-Not Eligible, PCE-Challenge, PPA-Portfolio Assessment, PPD-Portfolio Development Course, PAA-Articulation Agreement, PDE-Demonstration

**370/670 13-A Biotechnology (Health) Status-A Req. Grad GPA: 60**

Subj-Crse-Effective Term Course Title Crd Promo Grade/Mode Serv Stat TriqCrS Type Wks Hrs Total Comments PLA

**Sem 4 Semester Promotion GPA: 60**

**Core Courses**

COMM	10265	201410	Critical & Innovative Thinking	2	50	1	Y	A	<input type="checkbox"/>	Lec	14.00	2.00	<b>28.00</b>	COMM10034 Replacmnt
										Prereqs: EffTerm - 201410				
										Or COMM11040 Communication D				
										Or COMMLL041 Communications (I				
										Or COMMLL044 AC - Communicati				
										Or COMM10187 Commun & Aviatio				
										Or COMM10288 Written Comm for				
HSCI	10022	201410	Genetics	2	50	1	N	A	<input type="checkbox"/>	Lec	14.00	2.50	<b>35.00</b>	
										Prereqs: EffTerm - 201410 ( BIOL 10017 Cell Biology (Lec)				
										And BIOL 10018 ) Cell Biology (Lab)				
										Or BIOL 10001 Cell Biology				
HSCI	10023	201410	Pharmacology	3	50	1	N	A	<input type="checkbox"/>	Lec	14.00	3.00	<b>42.00</b>	
										Prereqs: EffTerm - 201410 ( HSCI 10161 Microbiology (Lec)				
										And HSCI 10162 Microbiology (Lab)				
										And CHEM 10010 Analytical Chemist				
										And CHEM 10011 ) Analytical Chemist				
										Or ( HSCI 10021 Microbiology				
										And CHEMPH108 ) Analytical Chemist				

Promo Grade Modes  
 1-Credit - Percentage/Alpha  
 2-Credit - RequirementsMet  
 3-Non Credit  
 4-For Exemption Only  
 5-Apprenticeship History  
 6-Percent/Alpha-WrkTm

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## Internship Schedule †

### ENVIRONMENTAL TECHNICIAN (INTERNSHIP) BIOTECHNOLOGY (INTERNSHIP) BIOTECHNOLOGY (HEALTH) (INTERNSHIP)

† Note: Subject to change

Year 1			Year 2			Year 3	
Sep–Dec	Jan–Apr	May–Aug	Sep–Dec	Jan–Apr	May–Aug	Sep–Dec	Jan–Apr
Semester 1	Semester 2	Vacation	Semester 3	Work	Work	Work	Semester 4

## PROGRAM PREREQUISITES

The above course prerequisites will apply to all students enrolled in programs within the School of Chemical, Environmental & Bio-Technology. It is the responsibility of the student to be aware of these prerequisites and to make arrangements for repeating any failed courses in consultation with their academic coordinator as required.



## **STUDENT EVALUATION AND GRADING**

Mohawk College uses a credit value system that supports the calculation of a weighted grade point average. Courses are assigned a number of credits based on their total course hours and these credits are multiplied by the grade obtained in the course when calculating a grade point average. In order to receive their diploma students must complete the entire program of studies and achieve a weighted GPA of at least 60%.

The grading system establishes one common passing grade level of 50% for all courses. Other grade designations which the student might encounter include the following:

AC	Attendance Complete
AN	Attendance Not Met
AU	Course Audit
CR	Credit Granted (Prior Learning Assessment)
E	Exemption Granted
I	Incomplete
R	Requirements Complete
UW	Unofficial Withdrawal

It is the responsibility of the student to be aware of various policies and procedures governing the School of Engineering Technology.

## **HONOURS SYSTEM**

There are two separate honours designations used by the College. A Dean's Honours list is published at the end of each semester and contains the names of full-time students who have achieved an overall standing of at least 85.0% with no failing grades at the end of each academic semester. A congratulatory letter is sent to the student from the Dean and Associate Dean in each semester in which the student qualifies.

At the completion of a program of study, students who have an overall standing of at least 85% with no failing grades will qualify for Honours Graduate status. Honours Graduates are announced at Convocation and they will receive a congratulatory letter from the College along with an attachment for the diploma.

For further information on the Honours System and Student Evaluation and Grading please contact the Registration Center at (905) 575-2364.

## **Chemical, Environmental & Biotechnology Student Code of Conduct**

Students in the Chemical, Environmental and Bio-Technology Department are expected to act in a responsible and professional manner at all times. The policies outlined below augment Mohawk College's well-defined policies regarding classroom and laboratory behavior and academic dishonesty. These policies are outlined on the Mohawk College website at [www.mohawkcollege.ca](http://www.mohawkcollege.ca)

### **Electronics Policies**

1. Students should have their cell phones turned off or turned to vibrate mode at all times in classroom and laboratory settings. If there are circumstances which require a cell phone to be left on, students are required to inform the instructor ahead of time and respond in a respectful manner should the cell phone ring.
2. All audio and video devices, including camera cell phones, should be turned off in classroom and laboratory settings.
3. The use of laptop computers in the classroom is at the discretion of the professor. When laptop computers are being used it is expected that they are being used in an appropriate manner and for academic purposes only.

### **Email and College Interaction Policies**

1. Students are expected to use email in an appropriate, respectful and professional manner.
2. Students are expected to check their eLearn and Mocomotion email accounts on a regular basis as this is the primary manner in which they will be contacted by Mohawk College and their professors.
3. Students who are absent from tests and/or laboratories are required to inform their professors by telephone and/or by email prior to the starting time of the test or laboratory. Students who fail to do so may forfeit the test and/or the lab.

## **Chemical, Environmental & Biotechnology Attendance Policy**

Students in the Chemical, Environmental & Biotechnology Department are expected to attend all scheduled lecture and laboratory sessions.

### **Lecture Attendance**

Attendance at all scheduled lectures is expected and highly recommended. Some courses have a lecture attendance evaluation component; most courses do take attendance during lecture sessions. It is the student's responsibility to access all material covered if they miss a lecture. If attendance is part of the course evaluation students need to show appropriate documentation for their absence not to affect their grade.

### **Laboratory Attendance**

Laboratory attendance is mandatory in all courses that contain a laboratory component. For some courses, successful completion of the course requires complete attendance. Absence from a laboratory requires appropriate documentation. Students missing a laboratory must notify their laboratory instructor immediately. Once documentation has been established students are expected to make up a missed laboratory if at all possible.

To successfully complete the laboratory component of a course submission of all laboratory reports is required.

## **TRANSFER POLICY FOR ENVIRONMENTAL TECHNICIAN STUDENTS SEEKING DIRECT ENTRY INTO CHEMICAL ENGINEERING TECHNOLOGY PROGRAM**

Students who have graduated from the Environmental Technician or Environmental Technician Internship Program are eligible to transfer into the Chemical Engineering Technology – Environmental Program or the Chemical Engineering Technology Program. Acceptance is conditional upon seat availability.

Upon being accepted into a technology program, students will need to start in Semester 2 of the Chemical Engineering Technology Program where they will take:

- MATL MT207 – Materials Technology
- ELEC 10089 – Electricity for Technology
- CHEM 10008 and CHEM 10009 – General Chemistry 2 Lecture & Lab (highly recommended)

Following completion of these courses, students will proceed into semester 3 with a full course workload including exemptions in CHEM 10030 and CHEM 10031 – Analytical Chemistry 1 Lecture and Lab and the general education elective (OPEL XXXXX).

Note:

1. Students transferring to the Chemical Engineering Technology Program (No. 533) are expected to take all fifth- and sixth-semester courses, including lab components.
2. Environmental Technician graduates transferring to Chemical Engineering Technology may be exempt from the following Option Courses in semester 5 and 6

### **Semester 5**

- ENVR 10034 – Air Pollution Engineering Lecture
- CY 603 Hazardous & Solid Waste Management

### **Semester 6**

- CY 501 – Environmental Regulation

May 2011

## Biotechnology Technician (October 31, 2012)

MHK Course	Hrs/week		MAC Course	Hrs/week			Notes
	Lec	Lab		Lec	Lab	Tut	
Semester 1							
CHEM CH116 Chemistry	5	2.5	ENG TECH 1CH3 Chemistry	3	3	1	Credited
COMM LL041 Communications	3	0	GEN TECH 1CS3 Communication skills1	3	0	0	Credited
Semester 2							
BIOL 10001 Cell Biology	3	1	ENG TECH 1BI3 Biology	3	0	1	Credited for IBI3
CHEM 10002 Organic Chemistry - Intro	3	0	BIOTECH 2OC3 Organic Chemistry	3	3	0	Credited
BIOL 10000 Biotechnology1	3	2	BIOTECH 2B03 Biotechnology 1	3	3	0	Credited
CHEM PH 108 Analytical Chemistry1	3	3	ENG TECH 1AC3 Analytical Chemistry	3	3	0	credited
Semester 3							
HSCI 10021 Microbiology	3	2	BIOTECH 2MB3 Microbiology	3	3	0	Credited
Semester 4							
CHEM10000 Biochemistry	3	0	BIOTECH 2BC3	3	0	0	Credited

### Summary

Eight Courses are  
credited

## Biotechnology Technician (Health) (October 31, 2012)

### Summary

MHK course	Hrs/week		MAC course	Hrs/week			Notes
	Lec	Lab		Lec	Lab	Tut	
<b>Semester 1</b>							
CHEM CH116 Chemistry	5	2.5	ENG TECH 1CH3 Chemistry	3	3	1	Credited
COMM LL041 Communications	3	0	GEN TECH 1CS3 Communication skills1	3	0	0	Credited
<b>Semester 2</b>							
BIOL 10001 Cell Biology	3	1	ENG TECH 1BI3 BIOLOGY	3	0	1	Credited for IBI3
BIOL 10000 Biotechnology1	3	2	BIOTECH 2B03 Biotechnology 1	3	3	0	Credited
CHEM PH 108 Analytical Chemistry1	3	3	ENG TECH 1AC3 Analytical Chemistry	3	3	0	Credited
<b>Semester 3</b>							
HSCI 10021 Microbiology	3	2	BIOTECH 2MB3 Microbiology	3	3	0	Credited
<b>Semester 4</b>							
CHEM10000 Biochemistry	3	0	BIOTECH 2BC3	3	0	0	Credited
*HSCI10023 Pharmacology	3	0	BIOTECH 3PM3 - Pharmacology	4	0	0	Credited

### Summary

7-8 courses are credited

\*Pharmacology (added or taken according to the GPA)

## **Requirements for Chemical Engineering Technology Students Entering the Bachelor of Technology Program Process Automation**

Students who have selected the Process Automation Pathway in Semester 6 of the Chemical Engineering Technology Program are eligible to go into semester five of the Bachelor of Technology program in Process Automation if they have met the following requirements:

1. Successful completion of semester 6 of the Chemical Engineering Technology Process Automation Stream with a minimum GPA of 70%.

Note: If a GPA of 70% is not obtained students may be considered on an individual basis.

Upon being accepted into the B Tech program students will be exempt in the following B Tech courses:

Statistics  
Material Science  
Chemical Engineering 3

if a minimum grade of 75% has been obtained in each course.

## POLICY FOR WRITING OF TESTS

1. Each student is required to write tests at the time and place scheduled, unless alternative arrangements have been **previously agreed between the student and the professor** to cover exceptional circumstances. Students with special needs must follow College policy, and inform the professor of their requirements in good time for the arrangements to be made.
2. Students who become ill too close to the test time to make the above arrangements are required to do the following:



telephone the professor **at the earliest opportunity**. This contact should be made **before** the time of the test, and **no later than the next working day** if the test is held in the evening. Messages left on answering machines must include the date and time of the call, the student's name, class and number.



contact the professor as soon as possible after the illness. A doctor's note **must** be produced at this time.

3. Students who are prevented from attending due to last minute emergencies must contact the professor as described in the previous section. The professor will require details of the emergency situation.
4. Students who fail to appear to write a test without proceeding in accordance with the above will be considered "absentees". No re-write privileges will be allowed in these cases, and the grade for that test will be zero.
5. Writing the test at an alternative time will be allowed if the professor is satisfied that the reason is genuine, and if the student has correctly followed the above procedures. The arrangements are to be made between the professor and the student, and include the following conditions:
  - tests may be scheduled in the Math Learning Centre
  - the test questions may be changed;
  - the method of grading of the test may be changed;
  - the time, place and format of any re-scheduled test will be decided by the professor;
  - the same rules of attendance apply to the re-scheduled test as to the original test;
  - the decision of the professor in setting these conditions will be final.



## **STUDENT RULES OF CONDUCT EXAMINATIONS AND TESTS**

In this document the term "test" is intended to include both "tests" and examinations"; the term "invigilator" is meant to include any person authorized to supervise or conduct tests, that is, proctors, professors, support staff, etc.

1. Students must be aware of the College's policy on Academic Dishonesty.
2. It is the responsibility of the student to be aware of the place, starting time, and duration of all tests as well as the rules of conduct, which govern them.
3. Only eligible students and authorized invigilators are allowed access to the testing facility.
4. Students must display their student identification cards in a conspicuous place on their test station.

Students without a valid student identification card will not be permitted to write a test. (This condition may be waived at the invigilator's discretion.)  
Students may be required to sign a test attendance record.

5. Invigilators are authorized to assign specific test stations to students.
6. Students are expected to arrive at the testing facility at least five (5) minutes before the scheduled start time of the test.

Students will not normally be permitted to enter the testing facility unless authorized to do so by the invigilator.

7. No materials and equipment, including cell phones, computers, calculators, may be taken into the testing facility except when authorized by the invigilator and/or specified by the test paper.

(It is the responsibility of the student to be aware of the type and nature of resources that are allowed inside the testing facility).

Invigilators are authorized to inspect all equipment and materials used inside a testing facility and, if deemed appropriate, reset calculators.

8. Students who bring unauthorized resources into a testing facility, who assist other students, who obtain assistance from other students or any other unauthorized source, may not be permitted to complete the test. They may also be subject to further disciplinary action under the College's Academic Dishonesty Policy.

During test, students must not communicate with one another in any way.

9. Students will not be permitted access to a testing facility if a) the test has been in progress for more than thirty (30) minutes, or b), if one or more students have already left the testing facility. (Under special circumstances, the invigilator may waive this condition).

Students are not permitted to leave the testing facility during the first thirty (30) minutes of a test. If students are late for a test, they must complete their test in the remaining designated time, unless the invigilator authorizes an extension.

10. In cases of emergency, students leaving and returning to a testing facility must be accompanied by an invigilator, unless the invigilator waives this requirement.

11. **Students must enter and leave a testing facility QUIETLY.**

After leaving the testing facility, students must not remain in the immediate vicinity of the exit.

12. It is the student's responsibility to ensure that he or she has received the correct test paper and that the document contains the correct number of pages and questions.

Students must follow all instructions as contained in the test paper. Any changes to such instructions, if required, will be communicated by the invigilator.

13. At the conclusion of a test, all testing activity must cease. If this requirement is not observed, the invigilator may refuse to accept a student's test paper. A student must ensure that all test materials to be graded are, in fact, submitted at the end of the test and contain the student's name. An examiner is under no obligation to accept or grade test materials that a student has removed without authorization from the testing facility.

14. Alternative Testing Services provide disabled students with the opportunity to meet regular academic requirements while preserving the integrity of the testing process. Disability Services is governed by regular college policies and the Alternative Testing Service will operate in accordance with the Faculty's **Rules of Conduct** policy for testing, and the College's **Academic Dishonesty** policy. Students with disabilities are required to identify themselves to the Disability Office where the Special Needs Consultant will recommend alternative testing arrangements, where appropriate. **Please refer to the alternative Test/Examination procedure for students with disabilities (available through Student Services).**

## **SAFETY POLICY**

The Associate Dean, Faculty and Support Staff of the Department of Chemical, Environmental & Bio-Technology are committed to providing a safe and healthy laboratory learning environment for students, faculty and support staff. All levels of the Department of Chemical, Environmental & Bio- Technology (including students) actively support and participate in their functions related to the health and safety of both fellow employees and students.

Experimental work in Chemical, Environmental & Bio-Technology laboratories is designed to minimize the risk of accidents and health hazards. However, the handling of chemicals, molten metals, glassware, grinders and other equipment in the laboratories inevitably poses some potential hazards, especially in the event of the accidental spillage, breakage, etc. Since such accidents cannot be foreseen, it is important that you protect yourself from the consequences. The basis of all your actions in a workplace is to use common sense and to think before you act. Although it is impossible to eliminate 100% of the risks, the Chemical, Environmental & Bio-Technology Department has developed the following practices, procedures and rules to ensure a high measure of safety to prevent accidents and injuries. The Management, Faculty, Support Staff and **all** students are required to fulfill their responsibilities and obligations described in this document.

### **General Information**

Members of the Chemical, Environmental & Bio-Technology Department and students will:

1. Apply the knowledge and commit to memory the practices, procedures and rules contained in this manual.
2. Know where the nearest telephone or intercom device is located.
3. Know and understand the floor plans of laboratories in the Chemical, Environmental & Bio-Technology Department (attached in this document). In particular you must know the location and use of:
  - a) Fire Extinguisher Information
  - b) Safety Shower
  - c) Eye Wash Station
  - d) Electrical Shut-off
  - e) Fire Exit Route
  - f) Material Safety Data Sheets (MSDS)
  - g) First Aid

4. Learn the WHMIS (Workplace Hazardous Materials Information System) classification system outlined in the following pages of this document. In particular you must read, understand and follow the MSDSs, labels, hazards, safe handling procedures and emergency action for classes A, B, C, D<sup>1</sup> and D<sup>2</sup>, E and F.
5. Use the WHMIS classification and labelling system and MSDSs in all laboratories.
6. Be prepared to take appropriate action in an emergency.

# SAFETY RULES

## General Rules

The following rules, practices and procedures are common for all of the laboratories in the Department of Chemical, Environmental & Bio-Technology.

1. All second and third year students are required to pay an annual (two semesters) lab breakage deposit of \$40. Further instructions on payment of this deposit will be given during the first laboratory period. **Students who pay the deposit by September 30 and/or January 30 will receive a discount of \$5.00.**
2. All students registered in the Department of Chemical, Environmental & Bio-Technology laboratory courses are required to purchase:
  - ✓ a pair of suitable rubber gloves (compulsory), and a pair of latex gloves (optional).
  - ✓ a pair of protective goggles approved by both the Chemical, Environmental & Bio-Technology Department and the Canadian Standards Association (CSA) OR a CSA-approved pair of safety glasses
  - ✓ a full-length laboratory coat
  - ✓ a pipet bulb (these are available at the bookstore)
  - ✓ a box of J-cloths or paper towels to dry hands and glassware - paper towels are not supplied in the laboratory
3. **Back packs, school bags and coats are NOT ALLOWED in the laboratory. All personal belongings that are not pertinent to the lab must be left in a locker.**
4. **Protective Clothing**

A full-length laboratory coat must be worn at all times in a laboratory even when non-laboratory work is being performed. This includes time inside and outside regular scheduled laboratory time, regular class time (including if the laboratory is used as a lecture room) and would, for instance, still apply for all computer interfacing laboratories, or if a laboratory over-ran its time, or if technical report or project work was being performed.

Laboratory coats must be in good condition (e.g., no holes or ripped sleeves) and kept fastened (i.e., all buttons done-up) at all times. If the sleeves are too long then the cuffs must be rolled up.

In order to have adequate protection of legs and feet we require that pants (ankle-length) and closed shoes, without high heels, be worn in all laboratories.

Hats and ball caps are NOT permitted in department laboratories.

The use of earphones or ear buds are not permitted in department laboratories

## 5. **Eye Protection**

All students must purchase and wear a pair of CSA (Canadian Standards Association), and department, approved **safety goggles or Department approved safety glasses**. These will be required for experimental work as directed by the faculty member in charge of the laboratory session. If you wear prescription glasses, you **must** wear the approved safety goggles. Approved safety goggles and safety glasses are available from the Fennell Campus Bookstore.

No contact lenses are allowed in the laboratory. Students and faculty with contact lenses will be required to wear corrective glasses and safety goggles or safety glasses over their prescription glasses.

People wearing corrective glasses must wear approved safety goggles or safety glasses at all times.

Some experiments require the use of face shields. These will be supplied by the Department of Chemical and Environmental Technology.

Eye protection must be worn at all times in a laboratory even when non-laboratory work is being performed. This includes time inside and outside regular scheduled laboratory time, regular class time (including if the laboratory is used as a lecture room) and would, for instance, still apply for all computer interfacing laboratories, or if a laboratory over-ran its normal time, or if technical report or project work was being performed.

**(STUDENTS WHO DO NOT COMPLY WITH THIS RULING WILL BE TOLD TO LEAVE THE LABORATORY.)**

## 6. **Air Lines**

**The air lines in all laboratories must never be used to dry glassware.** These lines contain oil and/or greases, which will contaminate your glassware and analysis. More importantly, serious personal injury could occur if the glassware fractured.

## 7. **Fire Alarms**

The Fire Alarm is a single stage alarm which means that when the alarm sounds evacuation of the building is required. Leave the laboratory in a safe state by turning off all burners and other equipment. Close all supply taps at the central shut off station near the doors and shut off the electrical supply. Go quickly and calmly to the nearest exit and leave the building by the most direct route. Do NOT use the elevator. Take up a position outside and away from the building. Remain outside or in a sheltered location until an All Clear is given by Emergency Officials, Security or Fire Wardens.

### **If you discover a fire:**

Evacuate persons in immediate danger and close the door if possible. Go to the nearest fire alarm station and sound the alarm. Small fires may be smothered with an inverted beaker or damp paper towels. Fire extinguishers are located in the laboratories. To use the fire extinguisher, take it down, pull the safety pin and point the nozzle at the base of the fire from about three arm lengths away. Squeeze the handle and direct the flow of gas towards the base of the fire. If the fire is not easily put out within a few seconds, leave the laboratory and report the fire to security at ext. 55 or call 911. Never put yourself in danger!

### **Lockdown Procedures:**

An internal or external lockdown will be ordered upon identification or notification of a threatening situation. The lockdown will be communicated by a pre-recorded message

played over the building speaker system. In the laboratory turn off all burners and other equipment and close any supply taps. Secure doors, turn out lights and remain quiet and out of sight. The end of a lockdown situation will be communicated by a recorded 'all clear' announcement.

## 8. **Electrical Equipment.**

- a) Inspect the apparatus to be sure wires and other electrical components are not frayed, loose or broken.
- b) The bench top area on which the apparatus will be used must be dry.
- c) All electrical heating devices must be in an area free of flammable liquids, vapours or open containers of flammable liquids.
- d) Turn power switches on the apparatus to the **OFF** position before plugging into an outlet.
- e) No electrical device can be operated with wet hands.
- f) Do not attempt to repair an electrical device with out approval of the technologist. Replace a burned-out fuse with a proper fuse. If a fuse burns out find the cause. **Never** replace a fuse with a penny or a nail. **Never** use an oversized fuse.
- g) All apparatus using 115V supply must be connected with a 3-line cord and safely grounded.
- h) Any paint or other coating (e.g., rust) must be removed from the surface that is to be grounded.
- i) The grounding wire should be continuous (i.e., no joins).
- j) Leave enough slack in the ground line so that it will not be put under tension.
- k) There should be no exposed conductors that carry a voltage in excess of 30V.
- l) If you are to work on any electrical circuit always disconnect the apparatus from its power source. Do not just turn off its switch.
- m) Never jerk plugs from their outlet by pulling on the cord, always grasp the body of the plug and pull straight out.

### **Electric Shock**

Never touch a victim of electric shock until the electric power is shut off by the red button on the wall or at the main electric power panel.

9. **All hair that is longer than shoulder length must be tied back so that it cannot fall forward and possibly catch on fire.**
10. Students are not allowed entry to a laboratory except for students in an authorized class(s), and no unauthorized "visitors" are allowed in any laboratory.
11. **No student will work in a laboratory unsupervised.** All students must obtain permission from a faculty member and a technologist to work in a laboratory outside of scheduled hours. No unauthorized experiments or procedures are allowed in any laboratory.
12. No **HORSEPLAY** in a laboratory. **Horseplay and vandalism are not tolerated under any circumstances in the laboratory.** Such action will result in immediate removal from the laboratory and possible suspension from the program.
13. Your work area must be well organized and uncluttered.
14. No eating, drinking or smoking in any laboratory. Never taste or purposely inhale the fumes or dust of any chemical. Always use a fume hood.
15. You must wash your hands thoroughly at the end of a laboratory period and before eating, drinking or smoking.
16. Report all cuts, burns or accidental swallowing of chemicals, and breakages of all kinds to your professor and/or technologist. Go to the nearest first aid station (see the floor plans in the last section of this document).
17. For burns or chemicals spilled on skin, prolonged washing with copious amount of water for five (5) minutes or more may be necessary. Use cold running water and get the affected part under the tap immediately and ask for help from a professor or technologist.
18. When your experiment is finished, all services such as gas, water, and electricity (including computers on carts) must be turned off. All equipment, reagent bottles and glassware, etc. must be returned to their proper storage cabinets, and all surfaces (e.g., laboratory bench tops and fume hoods) must be cleaned before leaving the laboratory.
19. If any piece of laboratory equipment is not operating properly then electrical power must be cut and a prominent notice describing the problem must immediately be placed on the apparatus.
20. Report any malfunction of an instrument to the professor or technologist in charge of a lab. Do not attempt to repair or use an instrument that appears to be working improperly.



21. Students are responsible for all equipment issued to them. Breakage must be reported to the professor or technologist.

22. **Waste Disposal**

You must know the waste disposal procedures for the laboratory that you are in. **DO NOT put solids or water-immiscible liquids down a sink. Use containers provided in the fume hoods or ask your professor or technologist how to dispose of a waste chemical.**

**Mercury (Hg) Spills/Broken Thermometers**

a) Notify faculty or technologist immediately.

b) Obtain first-aid treatment if required.

c) Clean-up Procedure

When mercury (Hg) spills it breaks into very small droplets that can travel quickly possibly contaminating a large area. The clean up must always be prompt and thorough

i) Containment

- Put on a pair of protective gloves.
- Isolate the spill quickly to the area affected.
- Minimize any movement, which may spread the spill, within the isolated area.
- Prevent bench spills from falling to the floor.

ii) Physical Collection

- Remove broken glass from the area and place in a beaker.
- Collect all the small droplets into **one** larger drop by directing them slowly with a piece of non-absorbent smooth paper, spatula or scoopula.
- Scoop up the mercury (Hg) drop into a beaker and transport it and the contaminated glass to the Waste mercury (Hg) Storage Area (E305A)
- If mercury (Hg) collects in difficult location the droplets will be collected by vacuum aspiration (see technologist for equipment). It may be necessary to treat any suspected remaining contamination with an appropriate compound to form an amalgam (see technologist for details).

23. Do not use an air line to blow dust off of your clothes, face or hands, or to cool or dry glassware.

## Laboratory Specific

The following practices, procedures and rules are unique for the laboratories of a specific discipline.

### Chemistry Laboratories

The laboratories covered in this section are: E030, E303, E303B, E304, E305 (only when there are experiments using chemicals), E309 and E327. The computer room (E305C) is **not** covered under this section.

1. Many experiments require the use of fume hoods. You must understand the proper use of a fume hood and keep all fume hoods clean and tidy.
2. Use of Bunsen burners are restricted in many laboratories. Be sure that it is safe to light before doing so.
3. Laboratory E030 is a spark proof area. As such, all open flames such (e.g., Bunsen burners) are not allowed.
4. Transfer of chemicals. Be sure that you transfer all liquids (e.g., solvents) into the proper container. All transfer of solvents from large properly grounded safety cans to small reagent containers must be done in a fume hood. Transfer of chemicals (mainly solids) to be weighed must be done at a Top Loading balance only. Final measurement must be done at an Analytical balance. **(NO TRANSFER OF CHEMICALS WILL OCCUR AT AN ANALYTICAL BALANCE.)** Any spill of a chemical (liquid or solid) must be cleaned up immediately.
5. It is the policy of the Department of Chemical, Environmental Bio-Technology to implement the three Rs (reduce, reuse and recycle) for a safe environment. All laboratory activities are continually being revised to reduce waste, reuse chemicals (where possible) and recycle (e.g., organic solvents). However, when waste does occur, all waste organic chemicals must be disposed of in the appropriate container. For example, chemicals with oxygen (O<sub>2</sub>) must be disposed of in waste containers labelled with oxygen (O<sub>2</sub>) and chemicals without oxygen (O<sub>2</sub>) must be disposed of in another waste container labelled without oxygen (O<sub>2</sub>). Other waste containers may be labelled as ethers, metals or potassium permanganate etc. Also, individual experiments and laboratories may have unique disposal procedures. You **MUST NOT** dispose of a chemical in the wrong container. If you are unsure of a disposal procedure for a particular waste chemical always check with a faculty member or a technologist before disposal.
6. No pipetting by mouth is allowed in any laboratory. You **MUST** use a pipet bulb.
7. Label all containers that you are using with the name and concentration of the **chemical**, and if it is hot it must be clearly identified as **HOT**. You must know and understand all WHMIS symbols and hazards.
8. Keep fume hoods clutter free and clean. (N.B., Do not leave samples in a fume hood unattended or when it is not necessary for the sample to be in a fume hoods.)
9. Clean up all chemical spills (e.g., solvents, solids or aqueous solutions) immediately.

10. Clean up all broken glass immediately (use brush and dust pan provided). Dispose of broken glass **only** in the appropriate broken glass container.
11. Know the location of the eye wash fountain in every laboratory. Proper use of an eye wash fountain require the flushing of an eye for 15 minutes minimum with copious amounts of water while holding your upper and lower eyelids away from the eyeball and rolling eyes while washing affected eye.
12. While working with vacuum systems, be aware of the possibility of an **implosion**.  
**NOTE:** your professor will give specific precautions.
13. While working with pressurized systems, be aware of the possibility of an **explosion**.
14. Volatile flammable liquids must not be stored in ordinary refrigerators that have not been made explosion proof.
15. All used sample vials must be returned to the appropriate collection container.
16. All high-pressure cylinders must be secured and handled according to the WHMIS Worksite Specific instructions described in the Compressed Gases (Safe Handling Procedures) section of this document.

## **Physics Laboratories**

The laboratories covered in this section are: E111.

1. Lab coats and safety glasses are required in the physics labs
2. Avoid direct viewing of any light or laser source.
3. All the radiation sources used in this laboratory are of very low level, however, prolonged contact and exposure should be avoided.

## **Bio-Science Laboratories**

The laboratories covered in this section are: E304, E303, E309 and any others where sterile techniques are required.

1. Disposable laboratory coats and gloves may be required.
2. Bio-waste samples are to be disposed of in designated containers.
4. **No bio samples are to be removed** from the laboratories.

### **STERILE TECHNIQUE**

- Wipe the lab bench with a disinfectant solution (or 10% chlorine bleach solution) before and after working with live bacteria.
- When you remove the lid or cap from the sterile bottle or plate, avoid placing it on the lab

bench. Hold it facing downward using the thumb and little finger of your left hand. The rim and inside of the cap or lid should not touch any non-sterile surface.

- Place only sterile objects into a sterile tube or bottle. When using an adjustable-volume micropipette, remember that only the disposable tip is sterile; the rest of the pipette is not sterile.
- When using a sterile serological pipette, touch only the larger end opposite the tip. Hold the pipette firmly, about 1 – 2 inches from the large end, when inserting it into a pipette bulb or pump. Glass pipette, draw the lower part of the pipette through a flame and insert only the untouched lower portion of the pipette into a sterile container.
- *Remember:* Any sterile object that comes into contact with a non-sterile surface or object is no longer sterile.

## **EMERGENCY PROCEDURES INVOLVING A COMPRESSED GAS Class A Materials**

**If you see gas escaping from a cylinder which appears to be damaged or faulty:**

1. Alert others to the situation.
2. Do not approach the cylinder.
3. Evacuate the area and sound the fire alarm.
4. Call emergency 911 and relay information as to the nature of the problem.

**If you see gas escaping from an undamaged cylinder via an open valve that has been left open inadvertently:**

1. Alert others to the situation.
2. Try to identify gas but do not approach cylinder.
3. An authorized person will put on the personal protective equipment necessary, including a respirator and close the main cylinder valve.
4. Open windows if possible.
5. Evacuate area until gas leak discontinues.

**If you see a flammable gas escaping under any circumstances:**

1. Alert others to the situation.
2. Evacuate and sound the fire alarm.
3. Call emergency 911 and relay the necessary information.

## **EMERGENCY PROCEDURES INVOLVING FLAMMABLE AND COMBUSTIBLE MATERIALS Class B Materials**

1. Know the location and use of fire extinguishers and exit routes.
2. EVALUATE THE EXTENT OF THE FIRE

### **In Cases of Large Fires**

- a. Leave the area and be sure to move injured parties out. Shut doors behind you (**DO NOT LOCK**).
- b. Pull the fire alarm.
- c. Call 911 and relay information as to location and nature of fire. Report injuries.
- d. Evacuate the building using the appropriate exit routes. Do not use elevators.
- e. Notify Mohawk College emergency at 55 if possible.

### **In Cases of Small Fires**

- a. A fire in a small container can easily be controlled by covering it with a beaker or watch glass. Do not use a dry towel or pieces of clothing. Remove all nearby flammable material so as to prevent fire from spreading.
- b. Use a fire extinguisher only if the fire seems easy to control. Direct the stream of CO<sub>2</sub>, with a side-to-side motion, towards the base of the flames. When fighting a fire, always stand between the fire and an exit. Be prepared to pull the fire alarm and evacuate the building if necessary.

## **EMERGENCY PROCEDURES INVOLVING OXIDIZING MATERIALS**

### **Class C Materials**

1. Know the location and use of fire extinguishers, safety showers and eye wash stations in the area.
2. Alert other people in the area to the emergency.
3. In case of fire evacuate the area at once. Ensure that injured parties are helped out of the area.
4. Sound the fire alarm and call emergency 911.
5. Shut off electrical power and gas if possible.
6. First Aid

#### **For Ingestion**

Give plenty of water to drink. Call Medical Services at ext. 2084 and inform them of the substance ingested. Do not induce vomiting unless specifically directed to do so.

#### **For Skin or Eye Contact**

Immediately flush with water for at least 15 minutes using safety shower or eye wash if necessary. Obtain medical attention in room C109 or by calling ext. 2084. Remove jewellery or contact lenses.

#### **For Inhalation**

Move victim to fresh air. Call Medical Services at ext. 2084 if necessary. If victim is not breathing, start emergency resuscitation procedures (mouth to mouth breathing with mouth guard) and if qualified to do so, start CPR.

## SOME TYPICAL OXIDIZING MATERIALS CLASSIFIED ACCORDING TO THEIR CHEMICAL STABILITY

<p><b>NFPA Class 1 Oxidizers</b> (relatively stable). These may increase the burning rate of combustible materials that they contact. They include:</p>		
Aluminum nitrate Calcium chlorate Lithium hypochlorite Nitric acid (70% concentration or less) Potassium nitrate Sodium nitrate Sodium perborate Strontium peroxide	Ammonium persulfate Hydrogen peroxide solutions (8 to 27.5% by weight) Magnesium nitrate Potassium dichromate Silver dichloroisocyanurate dihydrate Sodium persulfate	Barium peroxide Lead nitrate Magnesium perchlorate Perchloric acid solutions (less than 60% by weight) Sodium dichromate Sodium nitrite Strontium nitrate Zinc peroxide
<p><b>NFPA Class 2 Oxidizers</b> (moderately unstable). These may moderately increase the burning rate or may cause spontaneous ignition of the combustible materials that they contact. They include:</p>		
Chromic acid Potassium permanganate Sodium peroxide Sodium permanganate Trichloroisocyanuric acid	Calcium hypochlorite (50% or less by weight) Hydrogen peroxide (27.5 to 52% by weight) Nitric acid (more than 70% concentration) Sodium chlorite (40% or less) 1,3-dichloro-5,5-dimethylhydantoin	
<p><b>NFPA Class 3 Oxidizers</b> (less stable than Class 2 but still moderately stable). These can severely increase the burning rate of the combustible materials they contact or they can undergo vigorous decomposition when in contact with a catalyst or exposed to heat. They include:</p>		
Ammonium dichromate Potassium bromate Potassium chlorate Sodium chlorate Sodium dichloroisocyanurate	Hydrogen peroxide (52 to 91% by weight) Perchloric acid solutions (60 to 72% by weight) Potassium dichloroisocyanurate Sodium chlorite (over 40% by weight)	
<p><b>NFPA Class 4 Oxidizers</b> (unstable). These can explode when in contact with a catalyst or when exposed to heat, shock or friction. They include:</p>		
Ammonium perchlorate Ammonium permanganate	Hydrogen peroxide (more than 91% by weight) Perchloric acid solutions (more than 72.5% by weight)	
<p>Adapted from the National Fire Protection Association (NFPA) 43A-1980, <i>Code for the Storage of Liquid and Solid Oxidizing Materials</i>.</p>		



## **EMERGENCY PROCEDURES INVOLVING POISONOUS AND INFECTIOUS MATERIALS D<sup>1</sup> and D<sup>2</sup> Class Materials**

D <sup>1</sup>	MATERIALS CAUSING IMMEDIATE AND SERIOUS TOXIC EFFECTS
D <sup>2</sup>	MATERIALS CAUSING OTHER TOXIC EFFECTS

1. Alert others to the situation.
2. If toxic gas or vapour builds up in an enclosed area, evacuate immediately. Call emergency 911 and relay information as to the nature of the emergency.
3. Treat overexposure of toxic chemicals as follows:

### **In case of Ingestion**

Determine the exact nature of substance ingested. Have the victim drink large amounts of water. Call Medical Services at extension 2084 or the POISON CONTROL CENTRE at 8-1-800-268-9017 and relay the necessary information. Do not induce vomiting unless specifically directed to do so. Never give anything by mouth to an unconscious person. If there is an antidote, administer it immediately.

### **In Case of Inhalation**

Move victim to fresh air. If victim is not breathing, begin mouth-to-mouth resuscitation immediately. If the heart has stopped (no pulse), start CPR (if trained to do so). Call Medical Services at extension 2084 as soon as possible.

### **In Case of Eye or Skin Contact**

Immediately use eye wash, safety shower or rinse for at least 15 minutes. Get medical attention.

## **EMERGENCY PROCEDURES INVOLVING CORROSIVE MATERIALS Class E Materials**

In emergencies like chemical fires, leaks and spills:

1. Alert others to the situation and evacuate if the problem is beyond your control.
2. Sound the fire alarm and call emergency 911 if necessary.
3. Obtain first aid if you have been exposed to corrosives.

### **For Eye Contact**

Flush eyes with water using the eye wash station for 15 to 20 minutes. Always get medical attention (Medical Services C109).

### **For Skin Contact**

Remove contaminated clothing and flood exposed skin with water for at least 15 minutes (use safety shower if necessary), obtain medical attention except for minor cases of skin contact.

### **For Inhalation**

Move victim to fresh air. If breathing has stopped begin mouth-to-mouth resuscitation. Call Medical Services at extension 2084 if necessary.

### **For Ingestion**

Give plenty of water to drink. **DO NOT INDUCE VOMITING.** Call Medical Services at extension 2084 or Security at extension 55

## **EMERGENCY PROCEDURES INVOLVING DANGEROUSLY REACTIVE MATERIALS Class F Materials**

1. Alert others to the situation.
2. If situation is beyond your control, leave the area immediately.
3. Sound the fire alarm. Call emergency 911 and relay information as to nature of emergency.
4. Evacuate the building. Make sure injured parties are attended to.
5. Contact Medical Services at extension 2084 in cases of injury and obtain first aid if required.

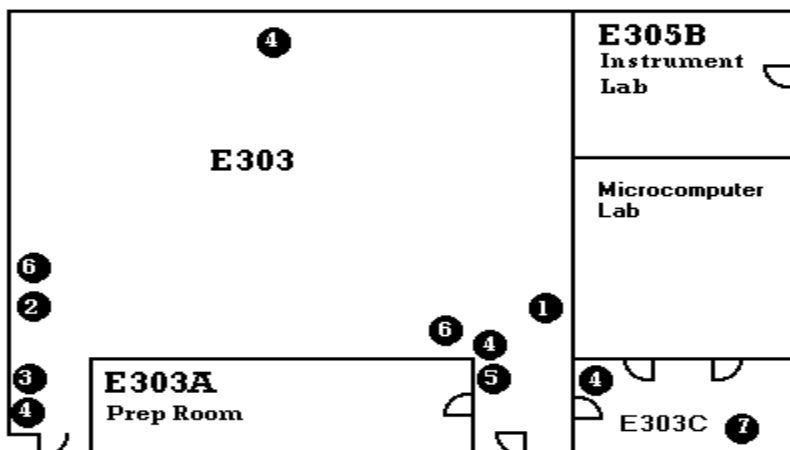
## **EMERGENCY PROTECTIVE EQUIPMENT AND INFORMATION**

Know the use and location of the emergency protective equipment available. Following is a list of the equipment and information found in the laboratory.

1. Fire Extinguisher (CO<sub>2</sub>)
2. Safety Shower
3. Eye Wash Stations
4. Electrical Shut Off (various locations)
5. Lab Utilities Shut Off
6. Fire Exit Routes
7. MSDSs (E030, E303C, E304A, E327)
8. First Aid Kit (E030, E305A, E306A)

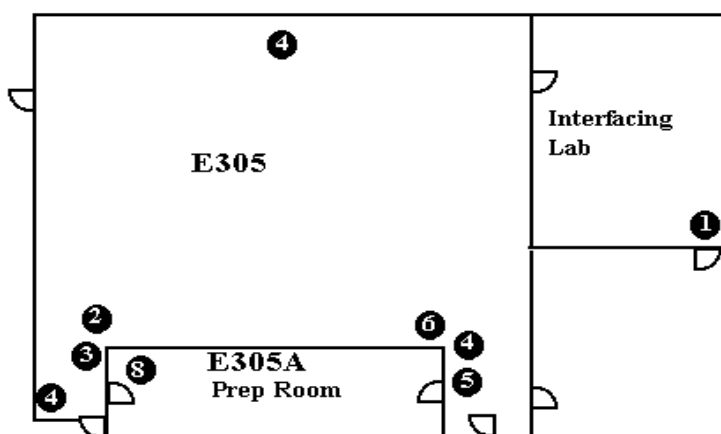
## LABORATORY FLOOR PLANS

1 - FIRE EXTINGUISHER 2 - SAFETY SHOWER 3 - EYE WASH STATION 4 - ELECTRICAL SHUT OFF	5 - LAB UTILITIES SHUT OFF 6 - FIRE EXIT ROUTE INFORMATION 7 - MSDS INFORMATION 8 - FIRST AID 9 - FIRE ALARM
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**E303 -  
PHYSICAL  
CHEMISTRY  
LAB**

>>E305



**E305 -  
ANALYTICAL  
CHEMISTRY LAB**

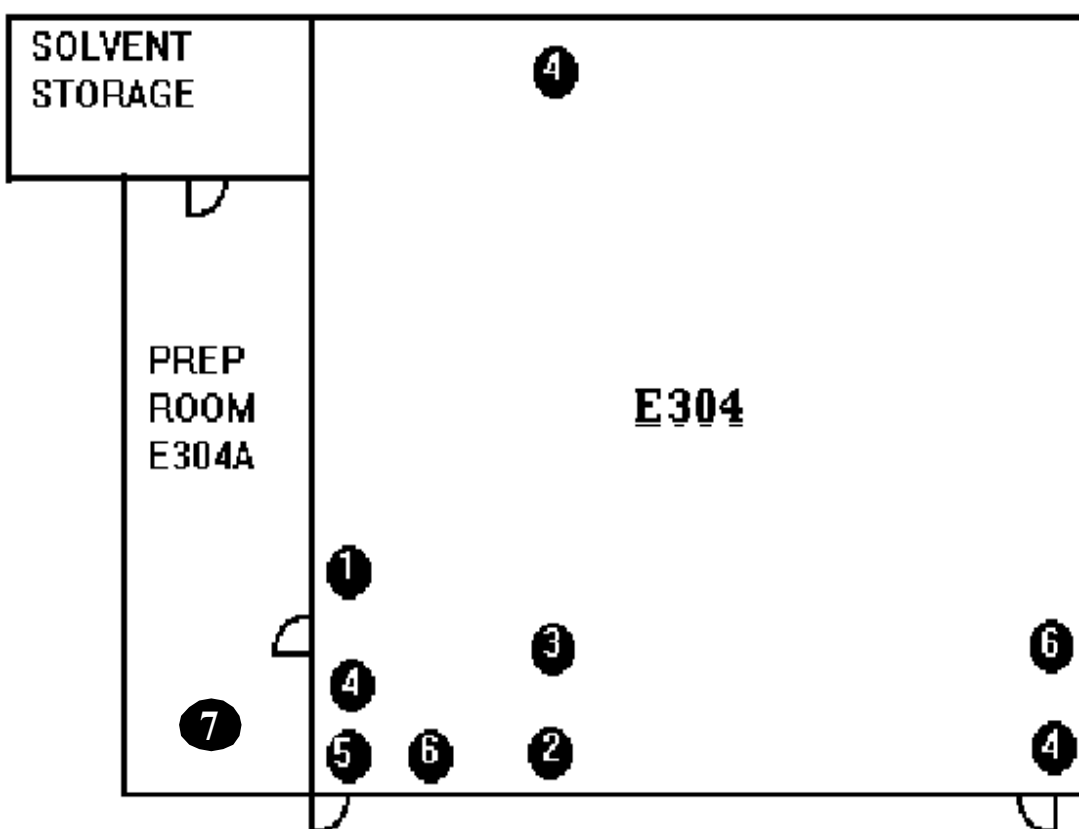
<<E303

>>E307

1 - FIRE EXTINGUISHER  
2 - SAFETY SHOWER  
3 - EYE WASH STATION  
4 - ELECTRICAL SHUT OFF

5 - LAB UTILITIES SHUT OFF  
6 - FIRE EXIT ROUTE INFORMATION  
7 - MSDS INFORMATION  
8 - FIRST AID  
9 - FIRE ALARM

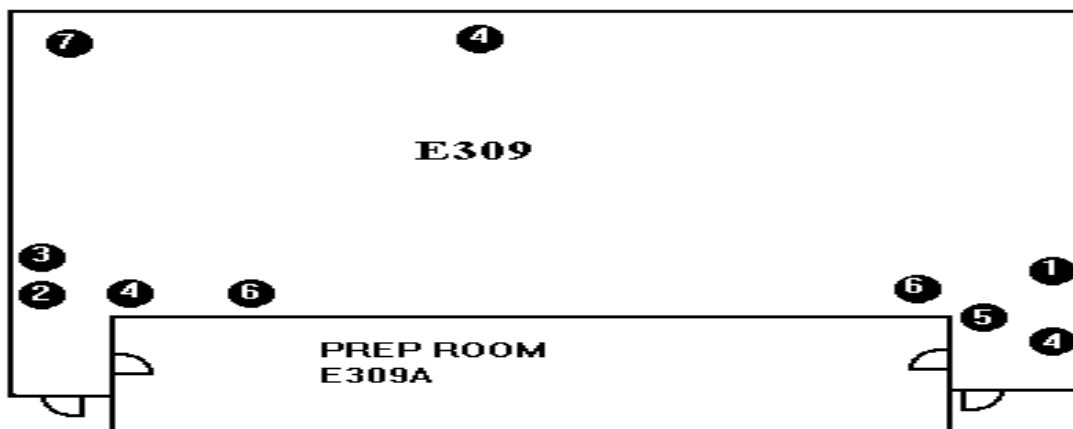
### E304 - ORGANIC CHEMISTRY LAB



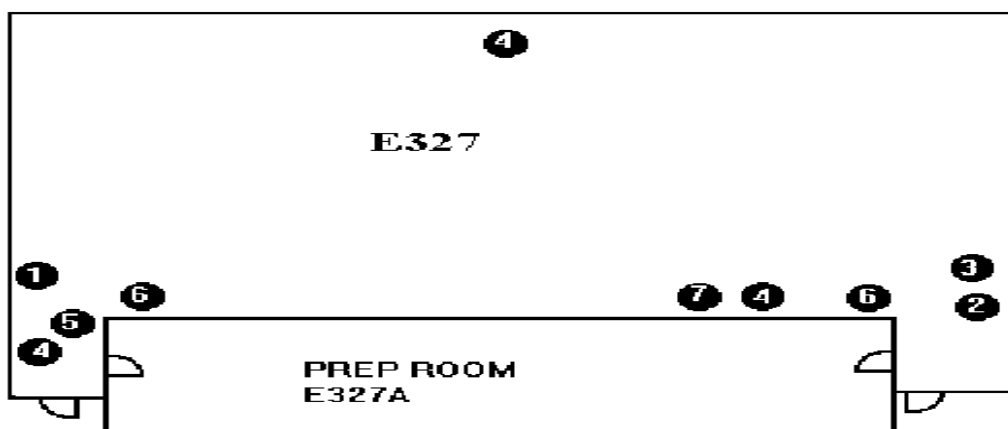
1 - FIRE EXTINGUISHER  
2 - SAFETY SHOWER  
3 - EYE WASH STATION  
4 - ELECTRICAL SHUT OFF

5 - LAB UTILITIES SHUT OFF  
6 - FIRE EXIT ROUTE INFORMATION  
7 - MSDS INFORMATION  
8 - FIRST AID  
9 - FIRE ALARM

### E309 - ANALYTICAL CHEMISTRY LAB



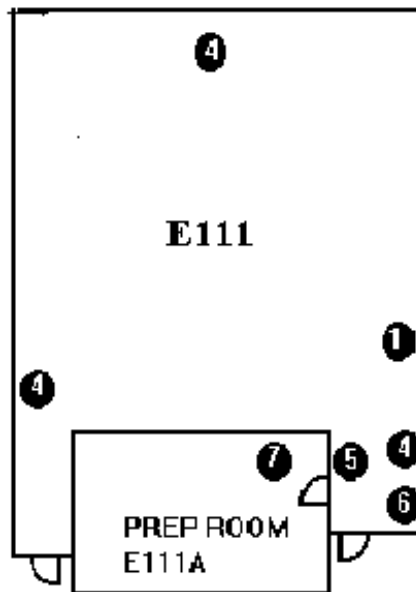
### E327 - GENERAL CHEMISTRY LAB



1 - FIRE EXTINGUISHER  
2 - SAFETY SHOWER  
3 - EYE WASH STATION  
4 - ELECTRICAL SHUT OFF

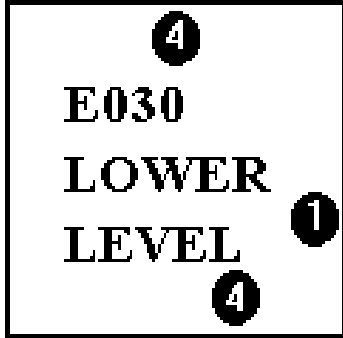
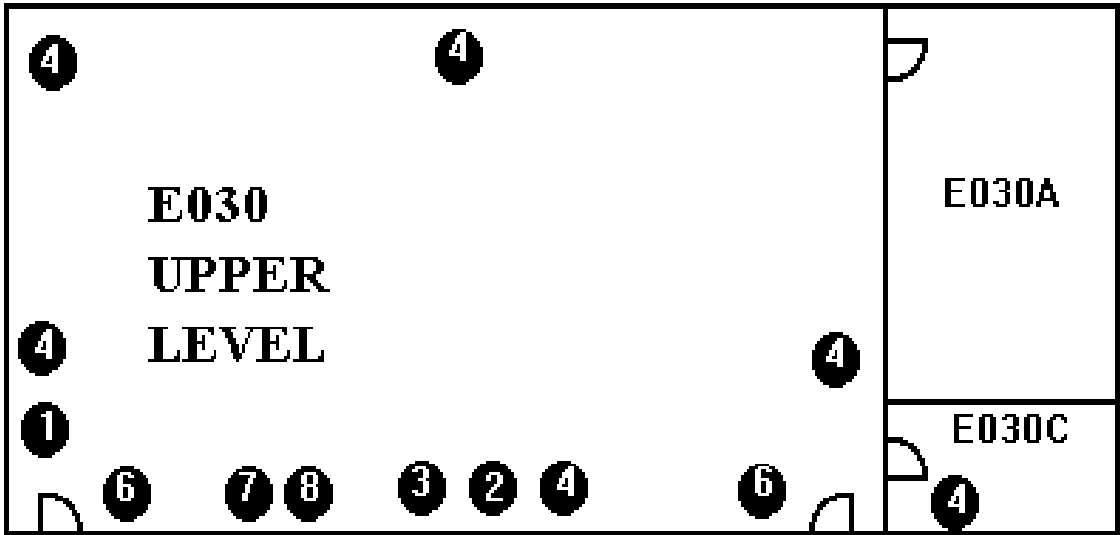
5 - LAB UTILITIES SHUT OFF  
6 - FIRE EXIT ROUTE INFORMATION  
7 - MSDS INFORMATION  
8 - FIRST AID  
9 - FIRE ALARM

**E111 - PHYSICS LAB**



1 - FIRE EXTINGUISHER 2 - SAFETY SHOWER 3 - EYE WASH STATION 4 - ELECTRICAL SHUT OFF	5 - LAB UTILITIES SHUT OFF 6 - FIRE EXIT ROUTE INFORMATION 7 - MSDS INFORMATION 8 - FIRST AID 9 - FIRE ALARM
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**E030 - CHEMICAL ENGINEERING AND MATERIALS TESTING LAB**





## **AWARDS, SCHOLARSHIPS, AND BURSARIES**

A variety of awards, scholarships, and bursaries are available every year through the Student Awards Office in the College. Each award has criteria written by the donor. Some awards are open to all Mohawk College students, while others are only open to specific Faculties within the College. We have included a partial list of awards from previous years that were available to students in the BECAM Department. These awards are dependent upon the donors and we cannot guarantee that these awards will be offered every year.

### **Chemical, Environmental, Biotechnology Awards, Scholarships and Bursaries**

Canon Canada Inc. OE Division Bursary  
Carole & George Fletcher Foundation Scholarship  
Chemical Institute of Canada Hamilton Section Scholarship  
Hamilton Industrial Environmental Association Bursary  
Hotz Environmental Bursary  
O.A.C.E.T.T. Hamilton Chapter Scholarship  
Ontario Onsite Wastewater Association Education Bursary  
Ontario Clean Water Agency Award  
Orville Erikson Memorial Award  
Walkerton Clean Water Centre Scholarship

## **TECHNICIAN or TECHNOLOGIST: WHAT'S THE DIFFERENCE**

The difference between technicians and technologists is a difficult concept to describe. There are people who may be classified as technicians in the workplace but perform the work of a technologist, and the reverse also applies.

A technician is normally someone who is skilled in handling instruments and performs tasks that require specialized skills, training, and knowledge. Technicians will choose from several available methods to solve problems where measure variables are involved and information is readily obtainable. Technicians will use basic algebra, geometry, trigonometry, and standard software packages to mathematically analyze conditions. They will troubleshoot systems to locate and repair faulty components. Technicians will perform repetitive design tasks and sometimes make site-specific and minor changes to existing plans, layouts and calculated values.

A technologist goes beyond the repetitive application of process. Technologists deal more with abstract concepts that are not readily demonstrated, but proven by means of indirect measurement and inference. They deal with complex, integrated systems of equipment, structures and processes. Technologists will develop methods of data collection and analysis, often leading to solutions which are complex. They troubleshoot problems and develop design improvements or alternative product applications. Technologists are adaptive individuals and will get looking for new and better ways to apply current technologies to their jobs.

In more general terms, technologists will normally have more responsibility and decision-making in their jobs than technicians. As a consequence of this the technologist requires more training and will normally have greater career opportunities and higher salary expectations.

No matter what program a student graduates from however, success is largely dependent on the student, and goals that he/she sets for him/herself.

## **JOB CENTER**

The Job Center provides assistance to students, employers and college personnel on a year round basis. The Office acts as an employment resource link between education and industry. Employment officers provide job referral services, pertinent labour market information, career advisement, and job search presentations. For information about Chemical and Mechanical graduate placements please call (905) 575-2167.

## **CO-OPERATIVE EDUCATION**

Co-operative Education (Co-op) extends the academic learning process into the workplace through on-the-job learning experiences. Co-op integrates the learning objectives contained in the program of studies with real life applications in the work force. These learning experiences enhance the student's vocational maturation and personal development.

The Co-operative Education Department is responsible for:

- Providing opportunities for paid, supervised off-campus work semesters in co-operating business, industry, and government agencies.
- Providing comprehensive career development services for co-op students within the academic curriculum.
- Enhancing the potential for graduate employment through industry contacts and career development in jobs that match the student's aspirations and training

The co-op staffs works closely with Chemical and Mechanical to ensure the job selection process jobs closely related to the academic program content. This close communication also provides feedback to the Program Co-ordinators and Advisory Committees, that the most appropriate skill sets are being developed to enable student success in Canadian business and industry.

The benefits to the students who participate in co-op are numerous:

- Experiencing practical applications of academic knowledge
- Acquiring career information for future decision-making
- Developing human relations and communication skills
- Earning money and managing finances
- Developing contacts for graduate employment
- Enhancing job search and interview skills
- Developing workplace learning objectives and career goals

Co-op employers have called the work semester a "four month interview" during which they can evaluate potential employees. The benefits to the co-op employer include:

- Better opportunity to evaluate potential employees
- Provision of motivated, well-educated, and capable employees
- Increased visibility in attracting qualified personnel
- Opportunity to become a "corporate citizen" by contributing to the education process
- Reduction of recruiting costs and improved retention by ensuring a better match of individual and position

In order to gain the most benefit from co-op an employer should develop a co-op plan with definite policies, procedures and goals. Points to be considered in this plan should include:

- Accurate, informative job descriptions to stimulate student interest

- An orientation to familiarize the incoming student with the employer's situation and expectations
- Supervision of students by individuals who understand and are interested in co-op
- Increasing responsibilities in successive work semesters for returning students
- An exit interview to discuss the student's performance and future plans

### **SPECIAL NOTES**

Students who enter a Co-op Program are expected to assume several responsibilities. They must compete for and obtain one of the available jobs or find acceptable alternative employment for the work semester. They are required to fulfil their agreements with employers and abide by the rules governing Co-operative Education. Failure to do so could result in suspension from the program and a failing grade in a work term. The format for co-op in the various programs is shown in Figure 2. Note that not all programs have the same co-op/academic semester sequence.

A student who declines to accept two job offers without just cause after interviews provided by the co-op staff may be prevented from taking further interviews. The student will then be required to find his/her own job.

Priority for co-op employment will be given to full-time students who are Canadian citizens or landed immigrants. If there are excess co-op positions available, International students may have access to the co-operative jobs.

Students participating in co-operative education will be assessed a co-op service fee per academic semester beginning with semester one.

**Full guidelines for co-operative education may be obtained from the Job Centre.**

The Job Centre staff attempts to provide work opportunities related to the students' career interests and program of studies. **This is not a guarantee.** The final work placement success is largely the responsibility of the student.

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