

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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#### 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

#### **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

### 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

#### 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 incorporate 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.

#### 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 ( N-Not Eligible, C-Chaile or Chailenge, P-Portfol Combination of Portfolio	Codes enge, E-Portfolio lo, PC- o and Challenge	Mohaw (include	k Co es pro	New PLA Codes NE-Not Elgible, PCE-Challenge, PPA-Portfolo Assessment, PPD-Portfolo Development Course, PAA- Articulation Agreement, PCE-Demonstration									
	533	13-A Chemical	Eng	ineering	Tech	nolo	gy	Status	s-A	Req. G	rad	GPA: 60	
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Sem 1 Se Core Cou	emestei rses	Promotion GPA:	60										
CHEM 10006	201230	General Chemistry 1 Lecture	5	50	1	Ν	Α		Lec	14.00	5.00	70.00	
CHEM 10007	201230	General Chemistry 1 Lab	1	50	1	N	Α		Lab	14.00	1.50	21.00	
CRED CE106	000000	Intro To Career Education	0		2	N	Α		Lec	14.00	0.50	7.00	
MATH MS173	000000	Mathematics	4	50	1	Y	Α		Lec	14.00	4.00	56.00	
PHYS 10001	201230	Physics 1 Lecture	4	50	1	N	Α		Lec	14.00	4.00	56.00	
PHYS 10002	201230	Physics 1 Lab	1	50	1	N	Α		Lab	14.00	1.00	14.00	
SAFE 10037	201230	H&S in Our Environment	2	50	1	Y	Α		Lec	14.00	2.00	28.00	
Option gr	oup 1	Select 1 course(s) f	rom (	option list	below	<i>r</i> :							
COMM 11040	201230	Communication D	4	50	1	Y	Α		Lec	14.00	4.00	56.00 COMM Strategy addition	
COMM LL041	201330	Communication	3	50	1	Y	Α		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-WrkTrm
		Page 1 of 15

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MATH 10024	200535	Math		3	50	1	Y	Α		Lec Prereq	14.00 s: Entre	3.00 erm - 20	0535	42.00	MATH MS173	3	Mathema	rtics
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Promo Grade Modes	1- Credit - Percentage/Alpha 2-Credit - RequirementaMet 3-Non Credit	4-For Exemption Only 5-Apprenticeship History 6-Percent/Alpha-WrkTrm
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		533	13-A	Chemica	l Eng	ineerin	g Tech	nolo	gy	Statu	ls-A	Req. (	Grad	GPA: 6	0		
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											Prereq	ја: Е <b>п</b> то	ərm - 2014	410 ( And Or	CHEM 10012 CHEM 10013 CHEM CH303	)	Chemical Engineer Chemical Engineer Chemical Engineer
CHEM 10	0016	201410	Organic	Chemistry 1 Lectu	re 2	50	1	N	Α		Lec	14.00	2.50	35.00		_	
											Prereq	is: Entro	ərm - 2014	410 ( And Or	CHEM 10008 CHEM 10009 CHEM PH209	)	General Chemistry General Chemistry General Chemistry
CHEM 10	0017	201410	Organic	Chemistry 1 Lab	3	50	1	N	A		Lab Prereq	14.00 (s: EffTe	3.00 arm - 2014	42.00 \$10 Or ( And	CHEM PH209 CHEM 10008 CHEM 10009	)	General Chemistry General Chemistry General Chemistry
CHEM 10	0018	201410	Analytica Lecture	al Chemistry 2	2	50	1	N	Α		Lec Prereq	14.00 (s: Entro	2.50 arm - 2014	35.00 410 ( And Or	CHEM 10030 CHEM 10031 CHEM CH302	)	Analytical Chemist Analytical Chemist Analytical Chemist

Promo Grade Modes	1- Credit - Percentage/Alphs 2-Credit - RequirementsMet 3-Non Credit	4-For Exemption Only 5-Apprenticeship History 6-Percent/Alpha-WrkTrm
		Page 6 of 15

# Chemical StreamEnglowing Termineteginetring GechnologySemester 6Semester 5Semester 6Semester 6

B Tech Process Automation

Ald PLA N-Not Eligibe, CG3 or Challenge, P-Portfo Combination of Portfolio	Codes hpc b, PC and Challenge	gy Di	plo <mark>Mohaw</mark>	k Co es pro	ollege I egreguisi	Proqr tes an	ram d/or e	of S	Studies valents)	<u>s</u>			NE-Not Eligible, Assessment, PP Articulation Agree	New PLA Codes PCE-Challenge, PPA-P D-Portfolio Developmen ement, PDE-Demonstra	Portfolic at Cours ation	se, PAA-
	533	13-A	Chemical	Eng	ineering	Tech	nolo	gy	Statu	s-A	Req. G	rad	GPA: 6	0		
Subj-Crse-Eff	ective Tern	<u>1</u>	Course Title	Crd	Promo Gra	de/Mode	<u>Serv</u>	Stat	<u>TriqCrs</u>	Туре	Wks	<u>Hrs</u>	Total	Comments		PLA
Sem 4 Second	emeste <sup>rses</sup>	r Pron	notion GPA	60												
CHEM 10019	201410	Analytica	l Chemistry 2 Lab	3	50	1	N	A		Lab Prereqs	14.00 EffTer	<u>3.00</u> m - 201	42.00 410 Or ( And	CHEM CH302 CHEM 10030 CHEM 10031	)	Analytical Chemis Analytical Chemis Analytical Chemis
MATH 10013	200930	Design C	f Experiments	3	50	1	Y	A		Lec Prereqs	14.00 EffTer	<u>3.00</u> m - 200	42.00 930 Or Or	MATH MS474 MATH MA482 MATH 10019		Statistics Statistics 2 Statistics 1
MGMT 10091	201410	Chemica Principle:	Management s	3	50	1	N	A		Lec Prereqs	14.00 EffTer	3.00 m - 201	42.00 410 Or ( And	CHEM PH209 CHEM 10008 CHEM 10009	)	General Chemistr General Chemistr General Chemistr



Run by: linda.wilson

Old PL N-Not Eligible, C-Cl or Challenge, P-Po Combination of Port	A Codes hallenge, E-Portfolio rtfolio, PC- folio and Challenge	Mohawl	k Co es pro	olleqe Pro	oqram and/or	of S equiv	Studie <sub>(alents)</sub>	<u>s</u>		NE-Not Eligible, P Assessment, PPD Articulation Agreer	lew PLA Codes CE-Challenge, PPA-F -Portfolio Developmer nent, PDE-Demonstra	Portfolia It Cour Ition	o se, PAA-
	533	13-A Chemical	Ena	ineering Te	chnol	odv	Statu	s-A R	Reg. Grad	GPA: 60	)		
Subi-Crse-	-ffective Terr	m Course Title	Crd	Promo Grade/M	ode Serv	Stat	TrigCrs	Type	Wks Hrs	Total C	omments		PLA
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CHEM 1002	201430	Organic Chemistry 2 Lecture	2	50 1	N	Α		Lec	14.00 2.50	35.00			
								Prereqs:	EffTerm - 201	430	CHEM CH402		Organic Chemistry
										Or (	CHEM 10016		Organic Chemistry
										And	CHEM 10017	)	Organic Chemistry
CHEM 1002	1 201430	Organic Chemistry 2 Lab	2	50 1	N	Α		Lab	14 00 2 50	35.00			
		0						Preregs:	EffTerm - 201	430	CHEMCH402		Organic Chemistry
										Or (	CHEM 10017		Organic Chemistry
										And	CHEM 10016	)	Organic Chemistry
CHEM 1002	2 201430	Analytical Chemistry 3 Lecture	2	50 1	Ν	Α		Lec	14.00 2.00	28.00			
								Prereqs:	EffTerm - 201	430 (	CHEM 10018		Analytical Chemist
										And	CHEM 10019	)	Analytical Chemist
										Or	CHEM CH408		Analytical Chemist
CHEM 1002	3 201430	Analytical Chemistry 3 Lab	3	50 1	N	Α		Lab	14.00 3.00	42.00			
		, ,						Prereas:	EffTerm - 201	430	CHEM CH408		Analytical Chemist
										Or (	CHEM 10018		Analytical Chemist
										And	CHEM 10019	)	Analytical Chemist
TNCT 1002	2 201420	Instrumental Analysis 1 Les	2	50 1	N	٨		Loc	14.00 2.00	28.00			
10022	2 201430	Instrumental Analysis T Lec	2	50 1	IN	A		Prorone:	EffTerm 201	430 (	CHEM CH402		Organic Chemistry
								r rereus.	Lineini - 201	And	CHEMICH402	)	Analytical Chemist
										Or (	CHEM 10016	'	Organic Chemistry
										And	CHEM 10017		Organic Chemistry
										And	CHEM 10018		Analytical Chemist
										And	CHEM 10019	)	Analytical Chemist
								L					,

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 N-Not Eligible, C-Chal or Challenge, P-Portfo Combination of Portfoli	Codes lenge, E-Portfolio olio, PC- io and Challenge		<u>Mohaw</u> (include	<mark>k Co</mark> es pre	ollege F	Proqu tes an	ram o d/or eo	of S	Studies <sub>(alents)</sub>	<u> </u>			NE-Not Eligible, A Assessment, PPI Articulation Agree	New PLA Codes PCE-Challenge, PPA-F D-Portfolio Developmen ment, PDE-Demonstra	Portfol nt Cou ation	io Irse, PAA-	
<u>Subj-Crse-Ef</u>	533 fective Term	13-A 	Chemical Course Title	Engi Crd	ineering Promo Grae	Tech	nnolog <u>Serv</u>	gy <u>Stat</u>	Status TrigCrs	<b>-A</b> <u>Type</u>	Req. <u>Wk</u>	Grad <u>s Hrs</u>	GPA: 6	0 Comments			PLA
Core Cou	irses	TION	otion of A.														
INST 10023	201430	Instrument	al Analysis 1 Lab	3	50	1	N	A		Lab Prereq	14.00 s: Eff	0 3.00 Term - 201	42.00 (430 ( And Or ( And And And	CHEM CH402 CHEM CH408 CHEM 10016 CHEM 10017 CHEM 10018 CHEM 10019	)	Organic Analytica Organic Organic Analytica	Chemistr al Chemis Chemistr Chemistr al Chemis al Chemis
INST EE359	201430	Instrument	ation & Control	6	50	1	Y	A		Lec Lab Prereq	14.00 14.00 s: Eff	0 3.00 0 3.00 Term - 201	42.00 42.00 1430 ( And And Or ( And And And And	CHEM PH209 MATH 10016 ELEC 10090 CHEM 10008 CHEM 10009 MATH 10016 ELEC 10090	)	General Math Electroni General General Math Electron	Chemistry ics for Te Chemistry Chemistry ics for Te
LAWS 10052	201230	Laws & Eth	ics	3	50	1	Y	A		Lec Prereq	14.00 s: Eff	0 3.00 Term - 201	<b>42.00</b> 1230	COMMLL041		Commur	ications (
		Pro	Modes 1- Credit - 2-Credit - 3-Non Cre	Percentag Requirement Requirement	e/Alpha 4-For Ex ntsMet 5-Apprer 6-Percer	emption Only nticeship Hist nt/Alpha-Wrk	y tory Trm _										
Run by: linda.wilso	on					Page 9 (	of 15						August-23-	13			

Old Pl N-Not Eligible, C-( or Challenge, P-P Combination of Po	LA Codes Challenge, E-Portfolio ortfolio, PC- rtfolio and Challenge	<u>Mohaw</u> (includ	/k Co les pr	ollege F egreguisit	Progr	am d/or e	of S	Studie: <sup>ralents)</sup>	<u>s</u>			NE-Not Eligible, Assessment, PI Articulation Agre	New PLA Codes PCE-Challenge, PPA- PD-Portfolio Developme rement, PDE-Demonst	Portfol Int Cou ration	io rse, PAA-
	533	13-A Chemical	Eng	ineering	Tech	nolo	qv	Status	s-A	Reg. (	Grad	GPA: 6	50		
Subj-Crse	Effective Terr	n <u>Course Title</u>	Crd	Promo Gra	de/Mode	<u>Serv</u>	Stat	<u>TriqCrs</u>	<u>Type</u>	Wks	<u>Hrs</u>	Total	Comments		PLA
Sem 5	Semeste	r Promotion GPA	: 60												
Option	group 1	Select 1 course(s)	from	option list	t below	v:									
BIOL 1001	.9 201430	Envir Biology & Toxicology Lec	2	50	1	Ν	Α		Lec	14.00	2.50	35.00			
									Prereq	s: EffTe	erm - 201	430 And	( CHEM 10016 CHEM 10017		Organic Chemistry Organic Chemistry
												And	CHEM 10008		General Chemistry
												And	CHEM 10009	)	General Chemistry
ENVR 1003	4 201430	Air Pollution Engineering Lec	2	50	1	N	Α		Lec	14.00	2.50	35.00			
									Prereq	s: EffTe	erm - 201	430	( CHEM 10008		General Chemistry
												And	CHEM 10009	)	General Chemistry
WAST CY60	3 201430	Hazardous & Solid Wst Mgt	2	50	1	N	Α		Lec	14.00	2.50	35.00			
									Prereq	S: EffTe	erm - 201	430	( CHEM 10016		Organic Chemistry
												And	CHEM 10017	)	Organic Chemistry
												Or	( CHEM 10002		Organic Chemistry
												And	ENVROH702		Environmental Scie
												And	ENVR CY501	)	Environmental Reg
												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-WrkTrm
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Old PLA Codes N-Not Eligible, C-Challenge, E-Portfolio	Mohaw	<u>/k College Progra</u>	m of Studies	s		New PLA Codes NE-Not Eligible, PCE-Challenge, PPA-Portfolio	
or Challenge, P-Portfolio, PC- Combination of Portfolio and Challenge	(includ	es pregreguisites and/	or equivalents)			Assessment, PPD-Portfolio Development Course, P Articulation Agreement, PDE-Demonstration	AA-
533 13 <b>-</b> A	Chemical	Engineering Techn	ology Statu	s-A	Req. Gra	d GPA: 60	
Subj-Crse-Effective Term	Course Title	Crd Promo Grade/Mode	Serv Stat TrigCrs	Type	<u>Wks</u> <u>H</u> ı	s <u>Total</u> <u>Comments</u>	<u>PLA</u>

#### Sem 6 Semester Promotion GPA: 60

Core Courses

10024	201510	Chemical Engineering 3 Lecture	3	50	1	Ν	Α		Lec	14.00	3.00	42.00			
									Prereqs:	EffTer	rm - 20151	0 (	CHEM 10014		Chemical Engineer
												And	CHEM 10015	)	Chemical Engineer
												Or	CHEM 10003		Chemical Engineer
10025	201510	Chemical Engineering 3 Lab	2	50	1	N	Α		Lab	14.00	2.50	35.00			
									Prereqs:	EffTe	rm - 20151	0 (	CHEM 10014		Chemical Engineer
												And	CHEM 10015	)	Chemical Engineer
												Or	CHEM 10003		Chemical Engineer
	10024	10024 201510 10025 201510	10024 201510 Chemical Engineering 3 Lecture 10025 201510 Chemical Engineering 3 Lab	10024     201510     Chemical Engineering 3     3       Lecture       10025     201510     Chemical Engineering 3 Lab     2	10024         201510         Chemical Engineering 3         3         50           Lecture         10025         201510         Chemical Engineering 3 Lab         2         50	10024         201510         Chemical Engineering 3         3         50         1           10025         201510         Chemical Engineering 3 Lab         2         50         1	10024         201510         Chemical Engineering 3         3         50         1         N           10025         201510         Chemical Engineering 3 Lab         2         50         1         N	10024         201510         Chemical Engineering 3         3         50         1         N         A           10025         201510         Chemical Engineering 3 Lab         2         50         1         N         A	10024       201510       Chemical Engineering 3       3       50       1       N       A       Lecture         10025       201510       Chemical Engineering 3 Lab       2       50       1       N       A       Image: A state of the s	10024       201510       Chemical Engineering 3       3       50       1       N       A       Lec         Prereqs:	10024       201510       Chemical Engineering 3       3       50       1       N       A       Lec       14.00         Prereqs:       EffTer         10025       201510       Chemical Engineering 3 Lab       2       50       1       N       A       Lab       14.00         Prereqs:       EffTer       Prereqs:       EffTer       EffTer       Prereqs:       EffTer	10024       201510       Chemical Engineering 3       3       50       1       N       A       Lec       14.00       3.00         Prereqs:       EffTerm - 20151       Prereqs:       EffTerm - 20151         10025       201510       Chemical Engineering 3 Lab       2       50       1       N       A       Lab       14.00       2.50         10025       201510       Chemical Engineering 3 Lab       2       50       1       N       A       Lab       14.00       2.50         Prereqs:       EffTerm - 20151       Prereqs:       EffTerm - 20151       Prereqs:       EffTerm - 20151	10024       201510       Chemical Engineering 3       3       50       1       N       A       Lec       14.00       3.00       42.00         Prereqs:       EffTerm - 201510       (       And       Or       0         10025       201510       Chemical Engineering 3 Lab       2       50       1       N       A       Lab       14.00       2.50       35.00         Prereqs:       EffTerm - 201510       (       And       Or       0       0	10024       201510       Chemical Engineering 3       3       50       1       N       A       Lec       14.00       3.00       42.00         Prereqs:       EffTerm - 201510       (       CHEM 10014       And       CHEM 10015       Or       CHEM 10015         10025       201510       Chemical Engineering 3 Lab       2       50       1       N       A       Lab       14.00       2.50       35.00         10025       201510       Chemical Engineering 3 Lab       2       50       1       N       A       Lab       14.00       2.50       35.00         Prereqs:       EffTerm - 201510       (       CHEM 10014       And       CHEM 10016       Or       CHEM 10016         0r       CHEM 10015       Or       CHEM 10015       Or       CHEM 10015       Or       CHEM 10015	10024       201510       Chemical Engineering 3       3       50       1       N       A       Lec       14.00       3.00       42.00         Prereqs:       EffTerm - 201510       (       CHEM 10014       And       CHEM 10015       )         10025       201510       Chemical Engineering 3 Lab       2       50       1       N       A       Lab       14.00       2.50       35.00         10025       201510       Chemical Engineering 3 Lab       2       50       1       N       A       Image: EffTerm - 201510       (       CHEM 10014         Prereqs:       EffTerm - 201510       (       CHEM10014       And       CHEM10014       And       CHEM10015       )         0       Or       CHEM10015       )       Or       CHEM10014       And       CHEM10015       )

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 NNxt Eligible, C-Challenge, E-Portfolio C Challenge, P-Portfolio, P-C Combination of Portfolio and Challenge					<u>Mohawk College Program of Studies</u> (includes pregreguisites and/or equivalents)											New PLA Codes NE-Not Eligible, PCE-Challenge, PPA-Portfolio Assessment, PPD-Portfolio Development Course, PAA- Articulation Agreement, PDE-Demonstration				
		533	13-4	A Chemical I	Engi	ineering	g Tech	nolo	gy	Status	s-A I	Req.	Grad	GPA:	60	)				
<u>Sub</u>	-Crse-Eff	ective Terr	<u>n</u>	Course Title	Crd	Promo Gra	ade/Mode	<u>Serv</u>	Stat	<u>TriqCrs</u>	Туре	Wks	Hrs	Tot	al <u>Co</u>	omments			<u>PLA</u>	
Sem	6 S	emeste	r Pro	motion GPA:	60															
Op	tion gr	oup 1	Sele	ct 4 course(s) fr	om o	option lis	st below	v:												
ASYS	10010	201510	Comp /	Applic & PLCs	2	50	1	Ν	Α		Lec	14.00	2.50	35.0	O CI	HEMICAL STI	REAI	N		
											Prereqs	EffT	erm - 201	510	(	INST EE359		Instrument	ation & (	
														Or		ASYS PH501	)	Lab&proce	ss Autor	
ASYS	10011	201510	Comp /	Applic & PLCs Lab	3	50	1	N	Α		Lab	14.00	3.00	42.0	O CI	HEMICAL ST	REA	N		
											Prereqs	EffT	erm - 201	510	(	INST EE359		Instrument	ation & (	
														Or		ASYS PH501	)	Lab&proce	ss Autor	
ASYS	EE489	200930	PLCs 8	Automation 1	6	50	1	Y	Α		Lec	14.00	3.00	42.0	00 Al	UTOMATION	STR	EAM		
							1		Α		Lab	14.00	3.00	42.0	00					
											Prereqs	s: EffT	erm - 200	930	(	INST EE359		Instrument	ation & (	
														And	d	MATH 10016	)	Math		
CADM	10015	200630	CAD D Automa	esign for Process at	3	50	1	Y	Α		Lab	14.00	3.00	42.0	00 AU	UTOMATION	STR	EAM		
CHEM	10026	201510	Organio	c Chemistry 3 Lecture	3	50	1	Ν	Α		Lec	14.00	3.00	42.0	0 CI	HEMICAL ST	REA	N		
											Prereqs	EffT	erm - 201	510	(	CHEM 10020		Organic Ch	nemistry	
														And	d	CHEM 10021	)	Organic Ch	nemistry	
														Or		CHEM CH502		Organic Ch	nemistry	
CHEM	10027	201510	Organie	c Chemistry 3 Lab	2	50	1	N	Α		Lab	14.00	2.00	28.0	O CI	HEMICAL ST	REA	M		
			<b>.</b>	, -							Prereqs	EffT	erm - 201	510	(	CHEM 10020	-	Organic Ch	nemistry	
														And	d	CHEM 10021	)	Organic Ch	nemistry	
														Or		CHEM CH502		Organic Ch	nemistry	

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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N-Not E or Chall Combin	Old PL/ ligible, C-Ch enge, P-Port ation of Portf	A Codes allenge, E-Portfoli folio, PC- olio and Challenge	D	<u>Moh</u>	nawk	<mark>(Col</mark> s pred	leqe	Proqr sites and	ram d/or e	of S	Studie	s			NE-Not Eligible Assessment, F Articulation Agr	New PLA Codes , PCE-Challenge, PPA- PPD-Portfolio Developme reement, PDE-Demonstr	Portfolio nt Cours ation	e, PAA-	
		533	13-A	Chem	ical E	Enain	eerin	a Tech	nolo	oav	Statu	ıs-A	Rea.	Grad	GPA:	60			
Sub	j-Crse-E	ffective Ter	<u>m</u>	Course Title	<u>e</u>	Crd P	romo G	rade/Mode	Serv	Stat	<u>TriqCrs</u>	Туре	Wks	<u>s Hrs</u>	Tota	Comments			<u>PLA</u>
Sem Op	tion g	Semeste Iroup 1	er Pror Selec	notion G t 4 course	GPA: ∋(s) fr	60 om op	otion li	st belov	v:										
COMP	10101	201030	Compute	er Programmir	ng	6	50	1	Y	Α		Lec	14.00	3.00	42.00	AUTOMATION	STRE	AM	
								1		Α		Lab	14.00	0 3.00	42.00				
ENVR	CY501	201610	Environn	nental Regula	tion	2	50	1	Ν	Α		Lec Prerec	14.00 as: EffT	) 2.00 Term - <b>2</b> 01	28.00	CHEMICAL ST	REAN	I-OPTIC General	N Chemistry
															Or Or And Or	CHEM 10007 CHEM PH109 ( CHEM 10028 CHEM 10029 CHEM CH116	)	General Chemist Chemist Chemist	Chemistry Chemistry ry (Lec) ry (Lab) ry
INST	10024	201510	Instrume	ntal Analysis	2 Lec	2	50	1	Ν	A		Lec Prerec	14.00 Is: EffT	) 2.50 Term - <b>2</b> 01	35.00 510 And Or	CHEMICAL ST (INST 10022 INST 10023 INST CH507	REAN )	Instrume Instrume Instrume	ental Analy ental Analy ental Analy
INST	10025	201510	Instrume	ntal Analysis	2 Lab	3	50	1	Ν	A		Lab Prerec	14.00 1s: EffT	0 3.00 Term - 201	42.00 510 And Or	CHEMICAL ST (INST 10022 INST 10023 INST CH507	REAN )	Instrume Instrume Instrume	ental Analy ental Analy ental Analy
MATH	MA940	200930	Mathema	atics 4		5	50	1	Y	A		Lec Prerec	14.00 as: EffT	) 5.00 Term - 200	70.00 930 And	AUTOMATION (MATH 10013 MATH 10016	STRE	EAM Statistics Math	s 2
MGMT	CY602	201610	Environn	nent Project M	lgt 1- Credit - Pr	2 ercentage/Al	50 pha 4-Fo	1	N	A		Lec Prerec	14.00 as: Effi	) 2.00 Term - <b>2</b> 01	28.00 610 And	CHEMICAL ST ( CHEM 10008 CHEM 10009	REAN )	I-OPTIC General General	)N Chemistry Chemistry
				Modes	2-Credit - Re 3-Non Credit	equirements) it	Net 5-Ap 6-Pe	prenticeship Hist rcent/Alpha-Wrk	ory Trm _										

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Old PLA Codes NNot Eligite. College Program of Studies College Program of Studies (includes pregreguisites and/or equivalents)												NE- Assi Artic	Not Eligible, essment, PF ulation Agre	New PLA Cod PCE-Challenge, Pl PD-Portfolio Develop ement, PDE-Demo	es PA-Portfoli ment Cour Instration	o se, PAA-	
	533	13 <b>-</b> A	Chemical	Eng	ineering	j Tech	nolo	gy	Statu	s-A	Req. G	rad G	PA: 6	0			
Subj-Crse-Eff	ective Terr	<u>n</u>	Course Title	Crd	Promo Gra	de/Mode	<u>Serv</u>	Stat	<u>TriqCrs</u>	Туре	Wks	Hrs	Total	Comments			<u>PLA</u>
Sem 6 Se Option gr	emeste <sup>.</sup> oup 1	r Prom Select	otion GPA: 4 course(s) f	: 60 from (	option lis	t belov	v:										
WAST 10001	201610	Wastewat	er Engineering	3	50	1	Ν	Α		Lec	14.00	3.00	42.00	CHEMICAL S	TREA		<b>N</b>
		Louure								Prerec	IS: EffTern	n - 20161(	) ( And	CHEM 1000 CHEM 1000	18 19 )	General General	Chemistry Chemistry

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         New PLA Codes           IN-Not Eligible, Consilence, E-Portolo (Containege, Portolo), PC- (Combination of Portolo) and Challence         Mechanication of PLA Codes           Includes pregreguisites and/or equivalents)         New PLA Codes													
	533	13 <b>-A</b>	Chemical	Engi	ineering Tech	nolo	ogy	Statu	s-A	Req. Grad	I GPA: 60		
Subj-Crse-Ef	fective Terr	<u>n C</u>	ourse Title	Crd	Promo Grade/Mode	<u>Serv</u>	Stat	<u>TriqCrs</u>	Туре	Wks Hrs	<u>Total</u> Comments	<u>PLA</u>	
Sem XX Option gr	Semes roup 1	ter Pror Select 2	notion GP 2 course(s)	A: from c	option list below	v:							
WORK 10030	200810	Work Exp 4	(Chem)	4	2	Y	Α		WT	14.00 35.00	490.00		
WORK CD992	200810	Work Exper	ience 2	4	2	Y	Α		WT	14.00 35.00	490.00		
WORK CD993	200810	Work Exper	ience 3	4	2	Y	Α		WT	14.00 35.00	490.00		
WORK PH991	200810	Work Exper	ience 1	4	2	Y	Α		WT	14.00 35.00	490.00		



August-23-13

## 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 N-Not Eligible, C-Chall or Challenge, P-Portfol Combination of Portfolio	Codes lenge, E-Portfolio lio, PC- o and Challenge	Moha (inclu	wk Co des pro	olleqe <sub>eqrequis</sub>	Progr ites and	am d/or e	of S equiv		New PLA Code NE-Not Eligible, PCE-Challenge, PPA-Portfolio Assessmer, PPD-Portiol Development Course, PAA- Articulation Agreement, PDE-Demonstration					
		453/463 13-A	Envir	onmen	tal Tec	hnic	ian	State	us-A	Req.	Grad	GPA: 60		
Subj-Crse-Eff	fective Terr	n <u>Course Title</u>	Crd	Promo Gr	ade/Mode	<u>Serv</u>	<u>Stat</u>	<u>TriqCrs</u>	Type	Wks	<u>Hrs</u>	Total Comments	<u>PLA</u>	
Sem 1 Se Core Cou	emeste Irses	r Promotion GP/	۹:											
CHEM 10028	201230	Chemistry (Lec)	5	50	1	Ν	A		Lec	14.00	5.00	70.00		
CHEM 10029	201230	Chemistry (Lab)	2	50	1	Ν	Α		Lab	14.00	2.50	35.00		
CRED CE106	000000	Intro To Career Education	0		2	Ν	Α		Lec	14.00	0.50	7.00		
MATH 10012	200830	Mathematics 1	3	50	1	Y	Α		Lec	14.00	3.00	42.00		
PHYS 10004	201230	Physical Measurements (Lec)	4	50	1	Ν	Α		Lec	14.00	4.00	56.00		
PHYS 10005	201230	Physical Measurements (Lab)	1	50	1	Ν	Α		Lab	14.00	1.00	14.00		
SAFE 10037	201230	H&S in Our Environment	2	50	1	Ν	A		Lec	14.00	2.00	28.00		
Option gr	roup 1	Select 1 course(s	) from (	option lis	st belov	v:								
COMM 11040	201230	Communication D	4	50	1	Y	Α		Lec	14.00	4.00	56.00 COMM Strategy addition		
COMM LL041	201330	Communication	3	50	1	Y	A		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-WrkTrm
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		4	453/463	13-A	Enviro	nment	al Teo	chnici	an	Statu	s-A R	Req. G	Frad G	PA: 6	0		
<u>Sub</u>	j-Crse-Eff	ective Term	Co	urse Title	<u>Crd</u>	Promo G	ade/Mod	le <u>Serv</u>	<u>Stat</u>	<u>TriqCrs</u>	Туре	Wks	<u>Hrs</u>	Total (	Comments		<u>PLA</u>
Sem Co	2 Se ore Cou	emester <sub>rses</sub>	Promot	tion GP	A:												
CHEM	10002	201310 (	Organic Cher	mistry - Intro	3	50	1	N	А		Lec	14.00	3.00	42.00			
			-								Prereqs:	EffTer	m - 20131	0 (	CHEM 10028		Chemistry (Lec)
														And	CHEM 10029	)	Chemistry (Lab)
														Or (	CHEM 10008		General Chemistry
														And	CHEM 10009	)	General Chemistry
														Or	CHEMCH116		Chemistry
CHEM	10010	201310 /	Analytical Ch	emistry (Lec	) 3	50	1	N	А		Lec	14.00	3.00	42.00			
											Prereqs:	EffTer	m - 20131	0 (	CHEM 10006		General Chemistry
														And	CHEM 10007	)	General Chemistry
														Or	CHEMPH109		General Chemistry
														Or (	CHEM 10028		Chemistry (Lec)
														And	CHEM 10029	)	Chemistry (Lab)
														Or	CHEM CH116		Chemistry
CHEM	10011	201310 /	Analytical Ch	emistry (Lab	) 3	50	1	N	А		Lab	14.00	3.00	42.00			
											Prereqs:	EffTer	rm - 20131	0 (	CHEM 10006		General Chemistry
														And	CHEM 10007	)	General Chemistry
														Or	CHEMPH109		General Chemistry
														Or (	CHEM 10028		Chemistry (Lec)
														And	CHEM 10029	)	Chemistry (Lab)
														Or	CHEM CH116		Chemistry

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

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

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

Old PLA Codes         New PLA Codes           INvex Elgible, C-Challenge, E-Portfolio Crabilenge, P-Portfolio, PC- Combination of Portfolio and Challenge         Mohawk College Program of Studies (includes prearequisites and/or equivalents)         Ne-Not Elgible, PCE-Challenge, PPA-Portfolio Ne-Not Elgible, PCE-Challenge, PPA-Portfolio Assessmert, PCE-Demonstration														o se, PAA-	
	453	13-A Enviro	onm	ental Te	chnici	an	Sta	tus-A	Req.	Grad	GPA	: 60			
Subj-Crse-Eff	ective Term	Course Title	Crd	Promo Gr	ade/Mode	<u>Serv</u>	Stat	<u>TriqCrs</u>	Туре	Wks	Hrs	Total	Comments		PLA
• • •															
Sem 2 Se	emester Pro	motion GPA:													
ENVR CY501	201310 Environ	mental Regulation	2	50	1	N	А		Lec	14.00	2.00	28.00			
									Prereqs:	EffTe	rm - 2013	10 (	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
ENVR OH702	201310 Environ	mental Science	3	50	1	Ν	Α		Lec	14.00	3.00	42.00			
									Prereqs:	EffTe	rm - 2013	10	CHEMPE106		Preparatory Chemi
												Or (	CHEM 10028		Chemistry (Lec)
												And	CHEM 10029	)	Chemistry (Lab)
												Or (	CHEM 10006	1	General Chemistry
												And	CHEM 10007	)	General Chemistry
												Or	CHEMCH116	1	Chemistry
												Or	CHEMPH109		General Chemistry
													01121111100		contra criticity
INFO 10166	201310 Lab Cor	nputer Appl (Lec)	2	50	1	Ν	Α		Lec	14.00	2.00	28.00			
INFO 10167	201310 Lab Cor	nputer Applic (Lab)	2	50	1	Ν	Α		Lab	14.00	2.00	28.00			
MATH 10020	200535 Math		3	50	1	Y	Α		Lec	14.00	3.00	42.00			
									Prereas:	EffTe	rm - 2005	35	MATHMS147		Mathematics
											-	Or	MATH 10012		Mathematics 1

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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August-23-13

Old PLA ( N-Not Eligible, C-Chall or Challenge, P-Portfol Combination of Portfolio	Codes enge, E-Portfolio io, PC- o and Challenge		1	Iohaw (includ	k Co es pro	olleqe egregui:	Progr sites and	am d/or e	of S quiv	Ni As Ar	New PLA Codes NE-Not Eligible, PCE-Otalienge, PPA-Portfolio Assessmer, PPD-Portiol Development Course, PAA- Articulation Agreement, PDE-Demonstration						
		453	13-A	Envir	onm	ental T	echnic	ian	Sta	tus-A	Req.	Grad	GPA:	60			
Subj-Crse-Eff	ective Term	1	Cours	e Title	Crd	Promo G	rade/Mode	<u>Serv</u>	<u>Stat</u>	<u>TriqCrs</u>	Type	Wks	Hrs	Total	Comments		<u>PL/</u>
Sem 3 Se	emeste	r Pro	motic	n GPA													
Core Courses																	
MATH MS474	201330	Statistic	s		3	50	1	N	A		Lec	14.00	3.00	42.00			
											Prereqs:	EffTe	rm - 2013	30	MATHMS173		Mathematics
														Or	MATH 10020		Math
														Or	MATH MS271		Mathematics
STEN 10014	201330	Water T	rtmnt Te	chy (Lec)	3	50	1	Ν	Α		Lec	14.00	3.50	49.00			
											Prereqs:	EffTe	rm - 2013	30 (	CHEM 10028		Chemistry (Lec)
														And	CHEM 10029	)	Chemistry (Lab)
														Or	CHEMCH116		Chemistry
STEN 10015	201330	Water T	rtmt Tec	hy (Lab)	2	50	1	N	А		Lab	14.00	2.00	28.00			
											Prereas:	EffTe	rm - 2013	30 (	CHEM 10028		Chemistry (Lec)
														And	CHEM 10029	)	Chemistry (Lab)
														Or	CHEMCH116		Chemistry
MACT 10002	201220	Wastow	rator Too	by (Loc)	3	50	1	N	٨		Loc	14.00	2.00	42.00			
WASI 10005	201330	Wasten	ater rec	ily (Lec)	5	50		IN	A		Proroac	EffTo	0.00 m 2013	42.00	CHEM 10029		Chomistry (Loc)
											ricieus.	Line	1111 - 2013	And	CHEM 10028		Chemistry (Lec)
														Or	CHEMICH116	'	Chemistry
											L				211211-011110		e
WAST 10004	201330	Wastew	vater Tec	hy (Lab)	3	50	1	Ν	А		Lab	14.00	3.00	42.00			
											Prereqs:	EffTe	rm - 2013	30 (	CHEM 10028		Chemistry (Lec)
														And	CHEM 10029	)	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-WrkTrm
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Old PLA N-Not Eligible, C-Chall or Challenge, P-Portfol Combination of Portfoli	Codes enge, E-Portfolio lio, PC- o and Challenge	<u>Mohaw</u> (include	k Co es pr	olleqe <sub>eqrequis</sub>	Proq ites an	ram nd/or e	of S equiv	Studie alents)	New PLA Codes NE-Not Eligible, PCE-Challenge, PPA-Portfolio Assessment, PPD-Portfolio Development Course, PAA- Articulation Agreement, PDE-Demonstration						
<u>Subi-Crse-Eff</u>	453 <u>rective Term</u>	13-A Enviro	onm <u>Crd</u>	ental Te Promo Gra	echnic ade/Mod	cian e <u>Serv</u>	Sta <u>Stat</u>	tus-A TrigCrs	Req. ( <u>Type</u>	Grad <sub>Wks</sub>	GPA: Hrs	60 <u>Total</u> (	<u>Comments</u>		PLA
Core Cou WAST CY603	201330 Hazard	dous & Solid Wst Mgt	2	50	1	N	A		Lec Prereqs:	14.00 EffTer	2.50 m - 20133	35.00 0 ( And And Or ( And Or	CHEM 10002 ENVR OH702 ENVR CY501 CHEM 10016 CHEM 10017 CHEM CH402	)	Organic Chemistry Environmental Sci Environmental Reg Organic Chemistry Organic Chemistry Organic Chemistry
Electives	200430 Gener Table	al Educ 1 Option	2		3	Y	A		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-WrkTrm
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Old PLA Codes Next Eliptise. C-Chalenge. E-Portfolo or Chalenge. Prototio. Combination of Portfolo and Chalenge (includes pregreguisites and/or equivalents)													New PLA Codes NE-Not Eligible, PCE-Challenge, PPA-Fortolio Assessmert, PDP-Portfolio Development Course, PAA- Articulation Agreement, PDE-Demonstration										
		453	13-A	Env	ironme	ental	Technic	ian	Sta	tus-A	Req.	Grad	GPA:	60									
Subj-Crse-Eff	ective Terr	<u>n</u>	Course	e Title	Crd	Promo	Grade/Mode	<u>Serv</u>	<u>Stat</u>	<u>TriqCrs</u>	Туре	Wks	<u>Hrs</u>	Total	Comments		<u>PLA</u>						
Sem 4 Se	emeste <sub>rses</sub>	r Pro	omotio	n GP/	<b>A</b> :																		
COMM 10265	201410	Critical	& Innovat	ive	2	50	1	Y	А		Lec	14.00	2.00	28.00	COMM10034 R	epla	cmnt						
			ŋ								Prereqs:	EffTe	rm - 20141	0 Or Or Or Or	COMM11040 COMMLL041 COMMLL044 COMM10187 COMM10288		Communication D Communications (I AC - Communicatio Commun & Aviatio Written Comm for I						
ENVR 10036	201410	Sampli	ing&Analys	sis (Lec)	2	50	1	Ν	A		Lec Prereqs:	14.00 EffTe	2.50 rm - 20141	35.00 0 And And And Or And And And Or And And And And And And	( CHEM 10018 CHEM 10019 CHEM 10016 CHEM 10017 MATHMS474 ( CHEM 10002 MATHMS472 CHEM 10010 CHEM 10010 CHEM 10010 CHEM 10010 CHEM 10011	)	Analytical Chemist Analytical Chemistry Organic Chemistry Statistics Organic Chemistry Statistics 1 Analytical Chemist Analytical Chemistry Statistics Analytical Chemistry Statistics Analytical Chemistry						

Promo Grade Modes	1- Credit - Percentage/Alpha 2-Credit - RequirementsMet 3-Non Credit	4-For Exemption Only 5-Apprenticeship History 6-Percent/Alpha-WrkTrm
		Page 6 of 8

Old PLA N-Not Eligible, C-Chall or Challenge, P-Portfo Combination of Portfoli	Codes lenge, E-Portfolio vilo, PC- io and Challenge	<u>Mohaw</u> (include	k C es pi	ollege regreguis	Progr sites and	am d/or e	of S	Studie <sub>(alents)</sub>	s		NE- Ass Artic	Not Eligible, F essment, PPE culation Agree	New PLA Codes PCE-Challenge, PPA-P D-Portfolio Developmen ment, PDE-Demonstra	ortfoli t Cou tion	o rse, PAA-
	45	3 13-A Enviro	onm	ental T	echnici	ian	Sta	atus-A	Req.	Grad	GPA:	60			
Subj-Crse-Ef	fective Term	Course Title	Crd	Promo Gr	ade/Mode	<u>Serv</u>	Stat	TriqCrs	Type	Wks	<u>Hrs</u>	Total (	Comments		PLA
Sem 4 Second	emester P Irses	romotion GPA:													
ENVR 10037	201410 Sar	npling&Analysis (Lab)	3	50	1	Ν	Α		Lab	14.00	3.00	42.00			
									Prereqs.	Ente	m - 201410	) ( And And And Or ( And And Or ( And Or ( And And And And And	CHEM 10018 CHEM 10019 CHEM 10016 CHEM 10016 CHEM 10017 MATH MS474 CHEM 10010 CHEM 10010 CHEM 10010 CHEM 10010 CHEM 10010 CHEM 10011	) )	Analytical Chemis Organic Chemistr Organic Chemistr Statistics Organic Chemistr Statistics 1 Analytical Chemist Analytical Chemist Statistics Analytical Chemist Statistics Analytical Chemist
ENVR 10038	201410 Air	Monitor&Pollu Ctrl (Lec)	2	50	1	Ν	A		Lec Prereqs:	14.00 EffTer	2.50 m - 201410	35.00 And And And And Or ( And And And	CHEM 10028 CHEM 10029 MATH 10012 CHEM 10010 CHEM 10011 CHEM CH116 MATH MS372 CHEM PH108	)	Chemistry (Lec) Chemistry (Lab) Mathematics 1 Analytical Chemis Chemistry Statistics 1 Analytical Chemis

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 N-Not Eligible, C-Chall or Challenge, P-Portfol Combination of Portfoli	Codes lenge, E-Portfolio lio, PC- o and Challenge	<u>Mohaw</u> (include	k Co es pro	<u>College Program of Studies</u>									New PLA Codes NE-Not Eighle, PCE-Challenge, PAA-Portfolio Assessment, PDP-Detriol Development Course, PAA- Articulation Agreement, PDE-Demonstration					
	453	13-A Enviro	onm	ental Te	echnici	ian	Sta	tus-A	Req.	Grad	GPA:	60						
Subj-Crse-Eff	fective Term	Course Title	<u>Crd</u>	Promo Gr	ade/Mode	<u>Serv</u>	<u>Stat</u>	<u>TriqCrs</u>	Туре	Wks	Hrs	Total C	comments		PLA			
Sem 4 Sem 4	emester Pro	motion GPA:																
Core Cou	irses																	
ENVR 10039	201410 Air Mo	nitor& Pollu Ctrl (Lab)	2	50	1	N	A		Lab	14.00	2.00	28.00						
									Prereqs	: EffTe	rm - 20141	10 (	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			
OUAL CY404	201310 Envir F	Proiects&ISO14000	4	50	1	N	Δ		Lec	14 00	4 00	56.00						
2000 00000	202020 2000						~		Prereas	EffTe	rm - 20131	0 (	ENVR CY501		Environmental Rec			
										- Enro	20131	Δnd	WAST CY302		Wastewater Techn			
												Δnd	WAST CY603		Hazardous & Solid			
									I			And		<u>′</u>				
WAST 10005	201330 Ind. W	W Trtmnt Proc(Lec)	3	50	1	Ν	Α		Lec	14.00	3.00	42.00						
									Prereqs	: EffTe	rm - 20133	30 (	WAST CY603		Hazardous & Solid			
												And	WAST 10003		Wastewater Techy			
												And	WAST 10004	)	Wastewater Techy			
WAST 10006	201330 Ind. W	W Trtmnt Proc (Lab)	3	50	1	Ν	Α		Lab	14.00	3.00	42.00						
	-	· · · ·							Prereas	EffTe	rm - 20133	30 (	WAST CY603		Hazardous & Solid			
											20100	And	WAST 10003		Wastewater Techy			
												And	WAST 10004	1	Wastewater Techy			
									1			Ally		1				



# **369/669 BIOTECHNOLOGY PROGRAM OF STUDIES (POS)** Please refer to the appropriate Program website for your most recent POS.

Old PLA ( N-Not Eligble, C-Chall or Challenge, P-Portfol Combination of Portfolio	Codes enge, E-Portfolio lo, PC- o and Challenge	, <u>Mohav</u> (inclue	vk Co des pro	ollege eareauis	Prog sites a	<b>iram</b> nd/or e	of S auiv	Studies valents)	<u>s</u>			New PLA Codes NE-Not Elgible, PCE-Chatlenge, PPA-Portfolio Assessment, PPD-Portfolio Development Course, PAA- Articulation Agreement, PDE-Demonstration	
		369 13-A	Biot	echnol	ogy	Statu	ıs-A	Req.	Grad	GPA:	60		
Subi-Crse-Eff	ective Ter	m <u>Course Title</u>	Crd	Promo Gr	ade/Moo	le <u>Serv</u>	Stat	<b>TrioCrs</b>	Type	Wks	Hrs	Total Comments	PLA
Sem 1 Se Core Cou	emeste rses	r Promotion GPA	: 60										
CHEM 10028	201230	Chemistry (Lec)	5	50	1	N	Α		Lec	14.00	5.00	70.00	
CHEM 10029	201230	Chemistry (Lab)	2	50	1	Ν	Α		Lab	14.00	2.50	35.00	
CRED CE106	000000	Intro To Career Education	0		2	Ν	Α		Lec	14.00	0.50	7.00	
MATH 10012	200830	Mathematics 1	3	50	1	Y	Α		Lec	14.00	3.00	42.00	
PHYS 10004	201230	Physical Measurements (Lec)	4	50	1	N	Α		Lec	14.00	4.00	56.00	
PHYS 10005	201230	Physical Measurements (Lab)	1	50	1	N	Α		Lab	14.00	1.00	14.00	
SAFE 10037	201230	H&S in Our Environment	2	50	1	Ν	Α		Lec	14.00	2.00	28.00	
Option gr	oup 1	Select 1 course(s)	from	option li	st belo	w:							
COMM 11040	201230	Communication D	4	50	1	Y	Α		Lec	14.00	4.00	56.00 COMM Strategy addition	
COMM LL041	201330	Communication	3	50	1	Y	Α		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-WrkTrm
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Old PLA N-Not Eligible, C-Chall or Challenge, P-Portfol Combination of Portfolio	Codes enge, E-Portfolio lo, PC- o and Challenge	Mohav (inclu	vk Co des pro	ollege eareauis	Prog ites a	gram and/or e	of S auiv	Studie: alents)	<u>s</u>			NE-Not Eligible, P Assessment, PPD Articulation Agreen	ew PLA Codes CE-Challenge, PPA-F Portfolio Developmen sent, PDE-Demonstra	ortfoli t Cour tion	o Tee, PAA-
		369 13-A	Biot	echnolo	gy	Statu	ıs-A	Req.	Grad	GPA:	60				
Subi-Crse-Eff	ective Terr	<u>Course Title</u>	Crd	Promo Gra	ade/Mo	de <u>Serv</u>	Stat	TriaCrs	Type	Wks	Hrs	Total C	omments		PLA
Sem 2 Se Core Cou	emeste Irses	r Promotion GPA	A: 60												
BIOL 10015	201310	Biotechnology 1 (Lec)	3	50	1	N	Α		Lec	14.00	3.00	42.00			
									Prerequ	EffTe	rm - 2013	310 (	CHEM 10028		Chemistry (Lec)
												And	CHEM 10029	)	Chemistry (Lab)
									I			Or	CHEMCH116		Chemistry
BIOL 10016	201310	Biotechnology 1 (Lab)	2	50	1	N	Α		Lab	14.00	2.00	28.00			
									Prereqs	EffTe	rm - 2013	310 (	CHEM 10028		Chemistry (Lec)
									1			And	CHEM 10029	)	Chemistry (Lab)
												Or	CHEMCH116		Chemistry
BIOL 10017	201310	Cell Biology (Lec)	3	50	1	N	Α		Lec	14.00	3.00	42.00			
									Prereqs	EffTe	rm - 2013	310 (	CHEM 10028		Chemistry (Lec)
												And	CHEM 10029	)	Chemistry (Lab)
												Or	CHEMPE106		Prenaratory Chem
									1				onean eroo		
BIOL 10018	201310	Cell Biology (Lab)	1	50	1	N	Α		Lab	14.00	1.00	14.00			
									Prereqs	EffTe	rm - 2013	310 (	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	Α		Lec	14.00	3.00	42.00			
									Prerequi	: EffTe	rm - 2013	310 (	CHEM 10028		Chemistry (Lec)
												And	CHEM 10029	)	Chemistry (Lab)
												Or (	CHEM 10008		General Chemistry
												And	CHEM 10009	)	General Chemistry
												Or	CHEMCH116		Chemistry
		Promo Grada 1-Crec	it - Percenteo	wAlpha 4-Fort	aemption	Only	1								

Promo Grade Modes	1- Credit - Percentage/Alpha 2-Credit - RequirementaMet 3-Non Credit	4-For Exemption Only 5-Apprenticeship History 6-Percent/Alphe-WrkTrm
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Old PLA N-Not Eligible, C-Chail or Chailenge, P-Portfol Combination of Portfoli	Codes ange, E-Portfolio Io, PC- o and Challenge	Mohaw (includ	/k Co les pr	ollege eareauis	Prog ites an	ram nd/or e	of S auiv	Studie: alents)	<u>s</u>		244	N E-Not Elgible, Pro ssessment, PPD rticulation Agreen	ew PLA Codes CE-Challenge, PPA-F Portfolio Developmen sent, PDE-Demonstra	Portfoli It Court Ition	o Ne, PAA-
		369 13-A	Biot	echnol	ogy	Statu	ıs-A	Req.	Grad	GPA:	60				
Subi-Crse-Eff	ective Term	Course Title	Crd	Promo Gr	ade/Mod	e <u>Serv</u>	Stat	TriaCrs	Type	Wks	Hrs	Total C	omments		PLA
Sem 2 Se Core Cou	emester Irses	Promotion GPA	: 60												
CHEM 10010	201310 Ar	alytical Chemistry (Lec)	3	50	1	N	Α		Lec	14.00	3.00	42.00			
									Prereqs.	EffTe	rm - 2013	10 ( And Or Or ( And Or	CHEM 10006 CHEM 10007 CHEM PH109 CHEM 10028 CHEM 10029 CHEM CH116	)	General Chemistry General Chemistry General Chemistry Chemistry (Lec) Chemistry (Lab) Chemistry
CHTEM 10011	201310 Ar	alytical Chemistry (Lab)	3	50	1	N	Α		Lab Prereqs	14.00 EffTe	3.00 rm - 2013	42.00 10 ( And Or Or ( And Or	CHEM 10006 CHEM 10007 CHEM PH109 CHEM 10028 CHEM 10029 CHEM CH116	)	General Chemistry General Chemistry General Chemistry Chemistry (Lec) Chemistry (Lab) Chemistry
MATH 10020	200535 M	ath	3	50	1	Y	Α		Lec Prereqs:	14.00 EffTe	3.00 rm - 2005	42.00 35 Or	MATH MS147 MATH 10012		Mathematics Mathematics 1

Promo Grade 1- Credit - PercentagaNiphs 4-For Exemption Only Modes 2-Credit - RequirementAlist 5-Apprenticeship Hatary S-Non Credit - Second Second

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Old PLA ( N-Not Eligible, C-Challe or Challenge, P-Portfol Combination of Portfolio	Codes enge, E-Portfolio lo, PC- o and Challenge	Mohav (inclue	vk Co les pr	ollege Prog egreguisites a	gram nd/or (	of S equiv	Studie: ralents)	<u>s</u>			NE-Not Elgible, Pri Assessment, PPD Articulation Agreen	ew PLA Codes CE-Challenge, PPA-F Portfolio Developmen sent, PDE-Demonstra	fortfoli t Court tion	o rse, PAA-
		369 13-A	Biot	echnology	Statu	us-A	Req.	Grad	GPA:	60				
Subi-Crse-Eff	ective Term	Course Title	Crd	Promo Grade/Mo	de <u>Serv</u>	<u>Stat</u>	TriaCrs	Type	Wks	Hrs	<u>Total</u> C	omments		PLA
Sem 3 Se Core Cou	emester Irses	Promotion GPA	: 60											
BIOL 10023	201330 E	iotech Unit Opera (Lec)	2	50 1	N	Α		Lec	14.00	2.50	35.00			
								Prereqs	EffTe	rm - 201	1330 (	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 E	iotech Unit Oper (Lab)	2	50 1	N	A		Lab Prereqs:	14.00 EffTe	2.50 rm - 201	35.00 1330 ( And And Or ( And	BIOL 10015 BIOL 10016 MATH 10020 BIOL 10000 MATH 10020	)	Biotechnology 1 (L Biotechnology 1 (L Math Biotechnology 1 Math
HSCI 10161	201330 M	ficrobiology (Lec)	3	50 1	N	Α		Lec Prereqs	14.00 EffTe	3.00 rm - 201	42.00	BIOL 10017		Cell Biology (Lec)
								1			And	BIOL 10018	)	Cell Biology (Lab)
											Or	BIOL 10001		Cell Blology
HSCI 10162	201330 M	ficrobiology (Lab)	2	50 1	N	A		Lab Prereqs	14.00 EffTe	2.00 rm - 201	28.00 1330 ( And Or	BIOL 10017 BIOL 10018 BIOL 10001	)	Cell Biology (Lec) Cell Biology (Lab) Cell Biology

Promo Grade Modes	1- Credit - Percentage/Alpha 2-Credit - RequirementaMet 3-Non Credit	4-For Exemption Only 5-Apprenticeship History 8-Percent/Alpha-WrkTrm
		Page 4 of 9

Old PLA C N-Not Eligible, C-Challe or Challenge, P-Portfoli Combination of Portfolio	Codes nge, E-Portfolio o, PC- and Challenge	'n	<u>Mol</u> (in	haw Iclude	k Co es pro	ollege eareaui	Prog sites ar	ram	of S equiv	Studie: alents)	<u>s</u>			NE-Not Eligible, I Assessment, PPt Articulation Agree	New PLA Codes PCE-Challenge, PPA-F 3-Portfolio Developmen ment, PDE-Demonstra	ortfoli t Cour tion	io Tele, PAA-
			369 13	-A	Biot	echno	ogy	Statu	ıs-A	Req.	Grad	GPA:	60				
Subi-Crse-Eff	ective Terr	m	Course Titl	e	Crd	Promo G	rade/Mod	le <u>Serv</u>	Stat	TriaCrs	Type	Wks	Hrs	Total (	Comments		PLA
Sem 3 Se Core Cou	emeste rses	r Pror	notion (	SPA:	60												
INST 10026	201330	Biochem	Proc Instrum	n (Lec)	2	50	1	N	Α		Lec	14.00	2.50	35.00			
INST 10027	201330	Biochem	Proc Instrum	n (Lab)	2	50	1	N	A		Lab	14.00	2.00	330 ( And And Or ( And 28.00	BIOL 10015 BIOL 10016 PHYS 10004 PHYS 10005 BIOL 10000 PHYS PH123	)	Biotechnology 1 (L Biotechnology 1 (L Physical Measurer Physical Measurer Biotechnology 1 Physical Measurer
											Prereqs	с Епте	rm - 201	And And And Or ( And	BIOL 10015 BIOL 10016 PHYS 10004 PHYS 10005 BIOL 10000 PHYS PH123	)	Biotechnology 1 (L Biotechnology 1 (L Physical Measurer Physical Measurer Biotechnology 1 Physical Measurer
MATH MS474	201330	Statistics	i		3	50	1	N	A		Lec Prereqs	14.00 : Entre	3.00 rm - 201	42.00 330 Or Or	MATH MS173 MATH 10020 MATH MS271		Mathematics Math Mathematics
QUAL 10000	201330	Quality A	issurance Sy	stems	3	50	1	N	A		Lec Prereqs	14.00 : Entre	3.00 rm - 201	42.00 330 ( And Or	CHEM 10010 CHEM 10011 CHEM PH108	)	Analytical Chemist Analytical Chemist Analytical Chemist

Promo Grade Modes	1- Credit - Percentage/Alpha 2-Credit - RequirementsMet 3-Non Credit	4-For Exemption Only 5-Apprenticeship History 6-Percent/Apha-WrkTrm
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Run by: IInda.wiison
Old PLA Co N-Not Eligble, C-Challeng or Challenge, P-Portfolio, Combination of Portfolio e	odes ge, E-Portfolio PC- nd Challenge	Mohav (inclue	vk Colle les preare	ege Progr equisites an	ram ( d/or e	of S auiv	Studies alents)	5			New PLA Codes NE-Not Eigble, PCE-Challenge, PPA-Portfolio Assessment, PPD-Portfolio Development Course, PAA- Articulation Agreement, PDE-Demonstration	
Subi-Crse-Effe	ctive Term	369 13-A Course Title	Biotech	nnology mo Grade/Mode	Statu <u>Serv</u>	s-A <u>Stat</u>	Req.	Grad	GPA: Wks	60 <u>Hrs</u>	Total Comments	PLA
Sem 3 Se Electives	mester Pro	motion GPA	: 60									
OPEL XXXXX	200430 Genera Table	I Educ 1 Option	2	3	Y	Α		Lec	13.00	2.00	26.00	

Promo Grade 1- Credit - Percentage/Alpha 4-For Exemption Only 2-Credit - RequirementalMet 5-Apprenticeship Hatary S-Non Credit - RequirementalMet 6-PercentReparative: Page 6 of 9

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OI N-Not Eligible or Challenge, Combination	Id PLA C a, C-Chale b, P-Portfolio of Portfolio	Codes nge, E-Portfolio o, PC- and Challenge	Mohav (inclu	wk Co des pro	ollege eareauis	Proc ites a	<b>iram</b> nd/or e	of S equiv	Studie: ralents)	5			NE-Not Eligible, F Assessment, PPC Articulation Agree	New PLA Codes PCE-Challenge, PPA >-Portfolio Development, PDE-Demonst	Portfol ent Cou	io rse, PAA-
			369 13-A	Biot	echnol	ogy	Statu	ıs-A	Reg.	Grad	GPA:	60				
Subi-C	rse-Effe	ective Terr	<u>Course Title</u>	Crd	Promo Gr	ade/Mod	de <u>Serv</u>	Stat	TriaCrs	Type	Wks	Hrs	Total (	Comments		PLA
Sem 4	Se	emeste	r Promotion GP	A: 60												
Core	e Cou	rses														
BIOL 1	0025	201410	Biotechnology 2 (Lec)	3	50	1	N	Α		Lec	14 00	3 00	42 00			
				-				~		Prereqs:	EffTer	rm - 201	410 ( And Or	BIOL 10015 BIOL 10016 BIOL 10000	)	Biotechnology 1 (L Biotechnology 1 (L Biotechnology 1
BTOL 1	0026	201410	Biotechnology 2 (Lab)	2	50	1	N	•		Lab	14.00	2.00	20.00			
2102 1			choice and only 2 (cab)	-		1.1		^		Prerens:	EffTer	m - 201	410 (	BIOI 10015		Biotechnology 1 /l
										, includes	2		And	BIOL 10016	1	Biotechnology 1 (L
													Or	BIOL 10000		Biotechnology 1
CHEM 1	0000	201410	Biochemistry	4	50	1	N	Α		Lec	14.00	3.00	42.00			
										Prereqs:	EffTer	rm - 201	410 (	BIOL 10017		Cell Biology (Lec)
													And	BIOL 10018		Cell Biology (Lab)
													And	CHEM 10002	)	Organic Chemistry
													Or (	BIOL 10001		Cell Biology
													And	CHEM 10002	)	Organic Chemistry
COMM 1	0265	201410	Critical & Innovative Thinking	2	50	1	Y	Α		Lec	14.00	2.00	28.00	COMM10034 F	Repla	icmnt
			•							Prereqs:	EffTer	rm - 201	410	COMM 11040		Communication D
													Or	COMMLL041		Communications (I
													Or	COMMLL044		AC - Communication
													Or	COMM 10187		Commun & Avlatio
													Or	COMM 10288		Written Comm for I

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 ( N-Not Eligible, C-Challe or Challenge, P-Portfol Combination of Portfolio	Codes enge, E-Portfolio lo, PC- o and Challenge	<u>Mo</u>	hawk C ncludes pr	ollege P reareauisite	rogram es and/or	of S	Studie ralents)	<u>s</u>		24	N E-Not Eligible, P ssessment, PPD ticulation Agreen	ew PLA Codes CE-Challenge, PPA-F Portfolio Developmen nent, PDE-Demonstra	fortfoli t Cour tion	o ne, PAA-
Subi-Crse-Eff	ective Terr	369 13 <u>n Course Tr</u>	-A Biot	Promo Grad	gy Stat e/Mode <u>Ser</u>	tus-A v <u>Stat</u>	Req. TriaCrs	Grad	GPA: <u>Wks</u>	60 <u>Нгз</u>	<u>Total</u> C	comments.		PL
Core Cou	rses	rPromotion	GPA: 60											
ENVR 10036	201410	Sampling&Analysis (	Lec) 2	50	1 N	A		Lec Prereqs:	14.00 Entred	<u>2.50</u> m - 2014	35.00 10 ( And And And Or ( And And And Or ( And And And And And And And And	CHEM 10018 CHEM 10016 CHEM 10016 CHEM 10017 MATH MS474 CHEM 10002 CHEM 10010 CHEM 10010 CHEM 10011 CHEM 10010 CHEM 10010 CHEM 10011	) )	Analytical Chemis Analytical Chemist Organic Chemistr Statistos Organic Chemistr Statistos Statistos Analytical Chemist Organic Chemist Organic Chemist Analytical Chemist Analytical Chemist Analytical Chemist
ENVR 10037	201410	Sampling&Analysis (	Lab) 3	50	1 N	A		Lab Prereqs:	14.00 EffTer	3.00 m - 2014:	42.00 ( And And And Or ( And And Or ( And And And And And And	CHEM 10018 CHEM 10019 CHEM 10016 CHEM 10017 MATH MS474 CHEM 10010 CHEM 10010 CHEM 10010 CHEM 10010 CHEM 10010 CHEM 10010	) )	Analytical Chemis Analytical Chemistr Organic Chemistr Statistos Organic Chemistr Statistos 1 Analytical Chemist Analytical Chemist Statistos Analytical Chemist Analytical Chemist
		Promo Grade Modes	1- Credit - Percenta 2-Credit - Requirem 3-Non Credit	ge/Alpha 4-For Exe entaMet 5-Apprenti 6-Percent/	mption Only beship History Alpha-WrkTrm _									

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Old PLA Codes N-Not Eligible, C-Challenge, E-Portfolio or Challenge, P-Portfolio, PC- Combineton of Portfolio and Challenge	Mohav (inclue	vk Co les pro	ollege Pro eareauisites	gram and/or e	of S auiv	Studie: alents)	<u>s</u>			NE-Not Eligible, Assessment, Pi Articulation Agre	New PLA Codes PCE-Challenge, PPA- PD-Portfolio Developme sement, PDE-Demonstr	Portfol nt Cou stion	o ree, PAA-
	369 13-A	Biot	echnology	Statu	IS-A	Req.	Grad	GPA:	60				
Subi-Crse-Effective Term	Course Title	Crd	Promo Grade/Me	ode <u>Serv</u>	Stat	TriaCrs	Type	Wks	Hrs	Total	Comments .		PL
Sem 4 Semester Pron Core Courses	notion GPA	: 60											
HSCI 10022 201410 Genetics		2	50 1	N	Α		Lec	14.00	2.50	35.00			
							Prereqs	EffTer	m - 20	1410	( BIOL 10017		Cell Biology (Lec)
										And Or	BIOL 10018	)	Cell Biology (Lab) Cell Biology
HSCI 10023 201410 Pharmac	ology	3	50 1	N	Α		Lec	14.00	3.00	42.00			
							Prereqs	EffTer	m - 20	1410	( HSCI 10161		Microbiology (Lec
										And	HSCI 10162		Microbiology (Lab
										And	CHEM 10010		Analytical Chemis
										And	( HSCI10021	)	Microbiology
										And	CHEMPH108	)	Analytical Chemis

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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# **370/670 BIOTECHNOLOGY (HEALTH) PROGRAM OF STUDIES (POS)** Please refer to the appropriate Program website for your most recent POS.

Old Pl N-Not Eligible, C-4 or Challenge, P-P Combination of Po	LA Codes Challenge, E-Portfolio ortfolio, PC- ortfolio and Challenge	, <u>Mohav</u> (inclu	wk Co des pro	ollege egreguis	Proqr sites and	am d/ore	of S quiv	Studies <sub>(alents)</sub>	3			New PLA Codes NE-Not Eligible, PCE-Challenge, PPA-Portfolio Assessment, PPD-Portfolio Development Course, PAA- Articulation Agreement, PDE-Demonstration
		370/670 13-A	Biote	chnolo	ogy (He	alth	) S	Status-A	Re	eq. Gra	d G	PA: 60
Subj-Crse	-Effective Terr	<u>n</u> <u>Course Title</u>	<u>Crd</u>	Promo G	ade/Mode	<u>Serv</u>	<u>Stat</u>	<u>TriqCrs</u>	<u>Type</u>	Wks	<u>Hrs</u>	Total Comments
Sem 1 Core C	Semeste	r Promotion GPA	A: 60									
СНЕМ 1002	201230	Chemistry (Lec)	5	50	1	Ν	Α		Lec	14.00	5.00	70.00
снем 1002	201230	Chemistry (Lab)	2	50	1	Ν	Α		Lab	14.00	2.50	35.00
CRED CE10	000000	Intro To Career Education	0		2	Ν	Α		Lec	14.00	0.50	7.00
MATH 1001	200830	Mathematics 1	3	50	1	Y	Α		Lec	14.00	3.00	42.00
PHYS 1000	04 201230	Physical Measurements (Lec)	4	50	1	Ν	Α		Lec	14.00	4.00	56.00
PHYS 1000	05 201230	Physical Measurements (Lab)	1	50	1	Ν	Α		Lab	14.00	1.00	14.00
SAFE 1003	37 201230	H&S in Our Environment	2	50	1	Ν	Α		Lec	14.00	2.00	28.00
Option	group 1	Select 1 course(s)	from o	option li	st belov	<b>v</b> :						
сомм 1104	10 201230	Communication D	4	50	1	Y	Α		Lec	14.00	4.00	56.00 COMM Strategy addition
COMM LL04	1 201330	Communication	3	50	1	Y	Α		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-WrkTrm
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Subj-Crse-Effect	ctive Term	Course Title	Crd	Promo Gra	de/Mod	e <u>Serv</u>	Stat	TrigCrs	Type	Wk	<u>s Hrs</u>		Total C	omments		
Sem 2 Ser Core Cours	mester ses	Promotion GPA	: 60								_					
SIOL 10015	201310 E	Biotechnology 1 (Lec)	3	50	1	Ν	Α		Lec	14.0	0 3.00	4	2.00	CUEM 40020		Chamista (I
									Prereqs.	EII	1erm - 201	310	(	CHEW 10028		Chemistry (D
													And	CHEM 10029	)	Chemistry (L
													or	CHEMICH116		Chemistry
BIOL 10016	201310 E	Biotechnology 1 (Lab)	2	50	1	Ν	Α		Lab	14.0	0 2.00	2	8.00			
									Prereqs:	Eff	Term - 201	310	(	CHEM 10028		Chemistry (L
													And	CHEM 10029	)	Chemistry (L
													Or	CHEMICH116		Chemistry
SIOL 10017	201310 (	Cell Biology (Lec)	3	50	1	Ν	Α		Lec	14.0	0 3.00	4	2.00			
									Prereqs:	Eff	Term - 201	310	(	CHEM 10028		Chemistry (L
													And	CHEM 10029	)	Chemistry (L
													Or	CHEMCH116		Chemistry
													Or	CHEMPE106		Preparatory (
SIOL 10018	201310 (	Cell Biology (Lab)	1	50	1	N	Α		Lab	14.0	0 1.00	1	4.00			
									Prereqs:	Eff	Term - 201	310	(	CHEM 10028		Chemistry (L
													And	CHEM 10029	)	Chemistry (L
													Or	CHEMCH116		Chemistry
													Or	CHEMPE106		Preparatory (
HEM 10002	201310 (	Organic Chemistry - Intro	3	50	1	N	Α		Lec	14.0	0 3.00	4	2.00			
		· ,							Prereas:	Eff	Term - 201	310	(	CHEM 10028		Chemistry (L
													And	CHEM 10029	)	Chemistry (L
													Or (	CHEM 10008	1	General Che
													And	CHEM 10009	)	General Che
													Or	CHEMICH116	1	Chemistry

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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New PLA Codes

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Old PLA Codes

#### Old PLA Codes N-Not Eligible, C-Challenge, E-Portfolio or Challenge, P-Portfolio, PC-Icombination of Portfolio and Challenge New PLA Codes NE-Not Eligible, PCE-Challenge, PPA-Portfolio Assessment, PPD-Portfolio Development Course, PAA-Articulation Agreement, PDE-Demonstration Mohawk College Program of Studies (includes pregreguisites and/or equivalents) 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

#### Sem 2 Semester Promotion GPA: 60

**Core Courses** 

10010	201310 Analytical Chemistry (Lec)	3	50	1	N	Α		Lec	14.00	3.00	42.00			
								Prereqs:	EffTe	rm - 20131	0 (	CHEM 10006		General Che
											And	CHEM 10007	)	General Che
											Or	CHEMPH109		General Che
											Or (	CHEM 10028		Chemistry (l
											And	CHEM 10029	)	Chemistry (I
											Or	CHEMCH116		Chemistry
10011	201310 Analytical Chemistry (Lab)	3	50	1	N	Δ		Lah	1/1 00	3.00	42 00			
10011	201010 / Halyada onomotry (Eab)	0	00	1.1		^		Prerege:	EffTo	rm 20131	42.00	CHEM 10006		General Che
								Fieleys.	Line	1111 - 20131	And	CHEM 10000	•	General Che
											Or	CHEMPH100	,	General Che
											Or (	CHEM 10020		Chomietry (I
											And	CHEM 10020	,	Chemistry (I
											Or	CHEMICH116		Chemistry
10020	200535 Math	3	50	1	Y	А		Lab	14.00	3.00	42.00			
								Prereqs:	EffTe	rm - 20053	5	MATHMS147		Mathematics
								· · ·			Or	MATH 10012		Mathematics
	10010	10010 201310 Analytical Chemistry (Lab) 10011 201310 Analytical Chemistry (Lab)	10010 201310 Analytical Chemistry (Lob) 3 10011 201310 Analytical Chemistry (Lab) 3	10010         201310         Analytical Ohemistry (Leb)         3         50           10011         201310         Analytical Chemistry (Lab)         3         50           10020         200535         Math         3         50	10010         201310         Analytical Chemistry (Lab)         3         50         1           10011         201310         Analytical Chemistry (Lab)         3         50         1           10020         200535         Math         3         50         1	10010 201310 Analytical Chemistry (Leb) 3 50 1 N 10011 201310 Analytical Chemistry (Lab) 3 50 1 N	10010 201310 Analytical Chemistry (Leb) 3 50 1 N A 10011 201310 Analytical Chemistry (Lab) 3 50 1 N A	10010 201310 Analytical Chemistry (Leb) 3 50 1 N A	10010       201310       Analytical Chemistry (Lec)       3       50       1       N       A       Lec         10011       201310       Analytical Chemistry (Lab)       3       50       1       N       A       Lab         Prereqs:	10010       201310       Analytical Chemistry (Lec)       3       50       1       N       A	10010       201310       Analytical Chemistry (Lec)       3       50       1       N       A	10010       201310       Analytical Chemistry (Leb)       3       50       1       N       A	10010       201313       Analytical Chemistry (Lec)       3       50       1       N       A <ul> <li>Prereqs:</li> <li>EffTerm - 201310</li> <li>CHEM 10000</li> <li>Or</li> <li>CHEM 10007</li> <li>Or</li> <li>CHEM 10029</li> <li>Or</li></ul>	10010       201313       Analytical Chemistry (Lec)       3       50       1       N       A

Promo Grade Modes Non Credit - Percentage/Alpha 2-Credit - RequirementsMet S-Apprenticeship History 6-Percent/Alpha

Old PLA C N-Not Eligible, C-Challe or Challenge, P-Portfolio Combination of Portfolio	Codes nge, E-Portfolio o, PC- and Challenge	<u>Mohav</u> (inclue	<mark>vk Co</mark> des pro	o <mark>lleqe</mark> eqrequis	Proc ites a	nd/or e	of : quiv	<u>Studie:</u> valents)	<u>s</u>		NE- Ass Artic	Not Eligible, Pro essment, PPD- culation Agreen	ew PLA Codes CE-Challenge, PPA-F Portfolio Development hent, PDE-Demonstra	Portfoli It Cour Ition	se, PAA-
		370/670 13-A	Biot	echnol	oav (I	lealth	)	Status-	A Re	a. Gra	ad GP	A: 60			
Subj-Crse-Effe	ective Term	Course Title	Crd	Promo Gr	ade/Mod	le <u>Serv</u>	Stat	TrigCrs	Type	Wks	Hrs	Total C	omments		<u>PLA</u>
sem s se	emester	Fromotion GFA	1: 00												
Core Cou	rses														
BIOL 10008	201330 lr	tro to Forensic Science	2	50	1	Ν	Α		Lec	14.00	2.50	35.00			
									Prereqs:	EffTer	m - 201330	0 (	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 P	hysiological Sciences	4	50	1	Y	Α		Lec	14.00	3.00	42.00			
					1		Α		Lab	14.00	1.00	14.00			
									Prereqs:	EffTer	m - 201330	0 (	BIOL 10017		Cell Biology (Lec)
												And	BIOL 10018	)	Cell Biology (Lab)
												Or	BIOL 10001		Cell Biology
HCOT 10161	201220 M	liarahialagy (Laa)	2	50	1	N	•		1.00	14.00	2.00	40.00			
HSCI 10101	201330 1	licrobiology (Lec)	5	50	1	IN	A		Droroger	14.00	3.00	42.00	BIOL 10017		Coll Dislom: (Los)
									Frereqs.	Ellie	III - <b>Z</b> 01330	J (	BIOL 10017		Cell Biology (Lec)
												Anu	BIOL 10018	)	Cell Biology (Lab)
												0i	BIOL 10001		Cell Biology
HSCI 10162	201330 N	licrobiology (Lab)	2	50	1	N	Α		Lab	14.00	2.00	28.00			
		0, ( )							Prereqs:	EffTer	m - 201330	0 (	BIOL 10017		Cell Biology (Lec)
												And	BIOL 10018	)	Cell Biology (Lab)
												Or	BIOL 10001	1	Cell Biology
MATH MS474	201330 S	tatistics	3	50	1	Y	Α		Lec	14.00	3.00	42.00			
									Prereqs:	EffTer	m - 201330	0	MATHMS173		Mathematics
												Or	MATH 10020		Math
												Or	MATHMS271		Mathematics

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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Run by: linda.wilson

Old PLA N-Not Eligible, C-Chall or Challenge, P-Portfol Combination of Portfoli	Codes enge, E-Portfolio io, PC- and Challenge	<u>Mohaw</u>	/k Co	ollege I	Proqu	ram (	of S	Studies	3			NE-Not Eligible, F Assessment, PPI Articulation Agree	lew PLA Codes CE-Challenge, PPA-F D-Portfolio Development ment, PDE-Demonstra	<sup>2</sup> ortfolie It Cour	o rse, PAA-	
Subj-Crse-Eff	ective Term	370/670 13-A Course Title	Biote Crd	echnolog Promo Gra	gy (He	ealth) <u>serv</u>	) S <u>Stat</u>	tatus-A	Rec <u>Type</u>	l. Gra <u>Wks</u>	d GF <u>Hrs</u>	PA: 60 Total (	Comments			<u>PLA</u>
Sem 3 Se Core Cou	emester rses 201330 G	Promotion GPA Quality Assurance Systems	: <b>60</b>	50	1	N	A		Lec	14.00	3.00	42.00				
Flections									Prereqs:	EffTer	m - 201	330 ( And Or	CHEM 10010 CHEM 10011 CHEM PH108	)	Analytical Analytical Analytical	l Chemist I Chemist I Chemist
OPEL XXXXX	200430 G T	eneral Educ 1 Option able	2		3	Y	A		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-WrkTrm
		Page 5 of 7

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August-23-13

Old PLA C N-Not Eligible, C-Challe or Challenge, P-Portfoli Combination of Portfolio	Codes enge, E-Portfolio io, PC- o and Challenge	<u>Mol</u>	nawk Co	lleqe grequis	Proq sites ar	ram nd/ore	of S	Studies <sub>/alents)</sub>	<u>.</u>		NE Ass Arti	Not Eligible, I essment, PPI culation Agree	New PLA Codes PCE-Challenge, PPA-P D-Portfolio Developmen ment, PDE-Demonstra	Portfoli It Cour Ition	o rse, PAA-
		370/670 13-/	A Biote	chnolo	oav (H	ealth	) 5	Status-A	Red	. Gra	d GP	A: 60			
Subi-Crse-Eff	ective Term	Course Titl	e Crd	Promo G	rade/Mod	e Serv	Stat	TrigCrs	Type	Wks	Hrs	Total (	Comments		PLA
Sem 4 Se	emester	Promotion 6	SPA: 60												
Core Cou	rses														
BIOL 10009	201410 E	Biomedical	4	50	1	Ν	А		Lec	14.00	2.00	28.00			
					1		A		Lab Prereqs:	14.00 EffTer	2.00 m - <b>20141</b>	28.00 0 (	BIOL 10012	)	Physiological Scier
BIOL 10010	201410 E	Biopharmaceuticals	2	50	1	N	А		Lec	14.00	2.50	35.00			
									Prereqs:	EffTer	m - 20141	0 ( And And And Or ( And	HSCI 10161 HSCI 10162 CHEM 10010 CHEM 10011 HSCI 10021 CHEM PH108	)	Microbiology (Lec) Microbiology (Lab) Analytical Chemist Analytical Chemist Microbiology Analytical Chemist
BIOL 10025	201410 8	Biotechnology 2 (Lec)	3	50	1	N	A		Lec Prereqs:	14.00 EffTer	3.00 m - 20141	42.00 0 (	BIOL 10015		Biotechnology 1 (L
												And Or	BIOL 10016 BIOL 10000	)	Biotechnology 1 (L Biotechnology 1
BIOL 10026	201410 E	Biotechnology 2 (Lab)	2	50	1	N	A		Lab Prereqs:	14.00 EffTer	2.00 m - 20141	28.00 0 ( And Or	BIOL 10015 BIOL 10016 BIOL 10000	)	Biotechnology 1 (L Biotechnology 1 (L Biotechnology 1
CHEM 10000	201410 E	Siochemistry	4	50	1	Ν	A		Lec Prereqs:	14.00 EffTer	3.00 m - 20141	42.00 0 ( And And Or ( And	BIOL 10017 BIOL 10018 CHEM 10002 BIOL 10001 CHEM 10002	)	Cell Biology (Lec) Cell Biology (Lab) Organic Chemistry Cell Biology Organic Chemistry
		Promo Grade Modes	1- Credit - Percentage/ 2-Credit - Requirement 3-Non Credit	Alpha 4-For sMet 5-App 6-Per	Exemption Or prenticeship His cent/Alpha-Wr	nly story kTrm_									

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<u>Subj-Crse-Ef</u>	fective Term	370/670 13-A Course Title	Biote Crd	echnolo Promo Gr	ogy (He ade/Mode	ealth <u>Serv</u>	Stat	Status-A TrigCrs	Rec Type	l. Gra <u>Wks</u>	ad GP. <u>Hrs</u>	A: 60 Total (	<u>Comments</u>		PLA
Sem 4 S Core Col	emester <sup>Irses</sup>	Promotion GP	<b>A</b> : 60												
COMM 10265	201410 (	Critical & Innovative Thinking	2	50	1	Y	A		Lec	14.00	2.00	28.00	COMM10034 R	epla	cmnt
									Fleleqs.	EIITe	1111 - 20141	Or Or Or Or Or	COMMILID41 COMMILID44 COMMILID44 COMMID187 COMMID288		Communication D Communications (I AC - Communication Commun & Aviatio Written Comm for I
HSCI 10022	201410 (	Genetics	2	50	1	N	A		Lec Prereqs:	14.00 EffTe	2.50 rm - 20141	35.00 0 ( And Or	BIOL 10017 BIOL 10018 BIOL 10001	)	Cell Biology (Lec) Cell Biology (Lab) Cell Biology
HSCI 10023	201410 F	Pharmacology	3	50	1	Ν	A		Lec Prereqs:	14.00 EffTe	3.00 rm - 20141	42.00 0 ( And And And Or ( And	HSCI 10161 HSCI 10162 CHEM 10010 CHEM 10011 HSCI 10021 CHEM PH108	)	Microbiology (Lec) Microbiology (Lab) Analytical Chemist Analytical Chemist Microbiology 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 <sup>†</sup>

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

<sup>†</sup> 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 Schoolt 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

### **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

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

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

Summary Eight Courses are credited

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

Pharmacology

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

#### **Summary**

Pharmacology

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.



 $\sim$  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
  - $\blacktriangleright$  the test questions may be changed;
  - $\succ$  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
  - $\checkmark$  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 nonlaboratory 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 s 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.
- I) 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 then 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. <u>Horseplay and vandalism are not tolerated under</u> <u>any circumstances in the laboratory</u>. 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) <u>Containment</u>
  - 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.

 $\succ$  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. Alter 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. <u>First Aid</u>

## 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

<b>NFPA Class 1 Oxidizers</b> (relatively stable). These may increase the burning rate of combustible materials that they contact. They include:								
Aluminum nitrate Calcium chlorate Lithium hypochlorite Nitric acid (70% concentration or less) Potassium nitrate Sodium nitrate Sodium perborate Strontium peroxide	Ammonium persulfateBarium peroxideHydrogen peroxide solutions (8 to 27.5% by weight)Barium peroxide Lead nitrateMagnesium nitrateMagnesium perchlorate Perchloric acid solutions (less than 60% by weight)Potassium dichromate Silver dichloroisocyanurate dihydrate Sodium persulfateBarium peroxide Lead nitrate Magnesium perchlorate Sodium other Sodium dichromate Strontium nitrate Zinc peroxide							
<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:								
Chromic acid Potassium permanganate Sodium peroxide Sodium permanganate Trichloroisocyanuric acid	Chromic acidCalcium hypochlorite (50% or less by weight)Potassium permanganateHydrogen peroxide (27.5 to 52% by weight)Sodium peroxideNitric acid (more than 70% concentration)Sodium permanganateSodium chlorite (40% or less)Trichloroisocvanuric acid1.3-dichloro-5.5-dimethylhydantoin							
NFPA Class 3 Oxidizers (less severely increase the burning undergo vigorous decomposition include:	s stable than Class 2 but still n rate of the combustible mater on when in contact with a catal	noderately stable). These can rials they contact or they can lyst or exposed to heat. They						
Ammonium dichromate Potassium bromate Potassium chlorateHydrogen peroxide (52 to 91% by weight) Perchloric acid solutions (60 to 72% by weight) Potassium dichloroisocyanurate Sodium chlorate Sodium dichloroisocyanurateSodium chlorate Sodium dichloroisocyanurateSodium chlorite (over 40% by weight)								
<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:								
Ammonium perchlorate Ammonium permanganate	Ammonium perchlorateHydrogen peroxide (more than 91% by weight)Ammonium permanganatePerchloric acid solutions (more than 72.5% by weight)							
Adapted from the National Fire Protection Association (NFPA) 43A-1980, Code for the Storage of Liquid and Solid Oxidizing Materials.								
# 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, leads 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 aide 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 EXTINGUISHER5 -2 - SAFETY SHOWER6 -3 - EYE WASH STATION7 -4 - ELECTRICAL SHUT OFF8 -9 -	- LAB UTILITIES SHOT OFF - FIRE EXIT ROUTE INFORMATION - MSDS INFORMATION - FIRST AID - FIRE ALARM
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E303 -PHYSICAL CHEMISTRY LAB





E305 -ANALYTICAL CHEMISTRY LAB

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

E304 - ORGANIC CHEMISTRY LAB



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
	9 - FIRE ALARM

E111 - PHYSICS LAB



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

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 chose 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 his 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 <u>two job offers</u> 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 <u>work opportunities</u> 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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