Honours in Chemistry (134 credits)		Honours in Chemistry (121 credits) Program abolished	
Requirements 2003-2005		**New course codes 2006**	
Compulsory first-year credits: Suggested course stream for full-time students	~~34~~	Compulsory first-year credits: Suggested course stream for full-time students	**29**
Fall:		**Fall:**	
~~CHM1310~~ Principles of Chemistry	~~4~~	**CHM1311** Principles of Chemistry	**3**
MAT1320 Calculus I	3	MAT1320 Calculus I	3
~~PHY110~~1 Fundamentals of Physics I	3	**PHY1121** Fundamentals of Physics I	**3**
~~PHY1201 Physics Laboratory~~	~~3~~		
Winter:		**Winter:**	
~~CHM1320~~ Organic Chemistry I	~~4~~	**CHM1321** Organic Chemistry I	**3**
~~PHY1102~~ Fundamentals of Physics II	3	**PHY1122** Fundamentals of Physics II	**3**
Either de combination :		Either de combination :	
MAT1322 Calculus II	3	MAT1322 Calculus II	3
MAT1341 Introduction to Linear Algebra	3	MAT1341 Introduction to Linear Algebra	3
or the combination of:		or the combination of:	
~~MAT1323 Calculus and Matrix Algebra~~	~~3~~		
		MAT1332 Calculus for the Life Sciences II	**3**
plus one of :		plus one of :	
MAT2324 Ordinary Differential Equations and Laplace Transformation	3	MAT2324 Ordinary Differential Equations and Laplace Transformation	3
MAT2331 Ordinary Differential Equations and Numerical Methods	3	MAT2331 Ordinary Differential Equations and Numerical Methods	3
MAT2378 Probability and Statistics for the Natural Sciences	3	MAT2378 Probability and Statistics for the Natural Sciences	3
Eight credits (minimum) from:	8	Eight credits (minimum) from:	8
~~BIO1110 Introduction to Cell Biology~~	~~4~~	**BIO1140** Introduction to Cell Biology	**3**
~~BIO1120 Introduction to Organismal Biology~~	~~4~~	**BIO1130** Introduction to Organismal Biology	**3**
~~CSI1100~~ Introduction to Computer Science I	~~4~~	**ITI1220** Introduction to Computer Science I	**3 (4)**
GEO1111 Introduction to Earth Systems	3	GEO1111 Introduction to Earth Systems	3
GEO1115 Introduction to Earth Materials	3	GEO1115 Introduction to Earth Materials	3
GNG1100 Engineering Mechanics	4	GNG1100 Engineering Mechanics	4
Four credits in introductory engineering	4	Four credits in introductory engineering	4
Other compulsory credits	~~63~~	Other compulsory credits	**55**
Fall:		**Fall:**	
~~CHM2116 Laboratory of Environmental Chemistry~~	~~2~~		
CHM2120 Organic Chemistry II	3	CHM2120 Organic Chemistry II	3
~~CHM2126~~ Laboratory of Organic Chemistry II	~~2~~	**CHM2123** Laboratory of Organic Chemistry II	**3**
CHM2131 Chemical Thermodynamics of Gases and Solutions	3	CHM2131 Chemical Thermodynamics of Gases and Solutions	3
~~CHM2154~~ Analytical Chemistry	3	**CHM2354** Analytical Chemistry	3
~~CHM235~~2 Descriptive Inorganic Chemistry	3	**CHM2353** Descriptive Inorganic Chemistry	3
CHM3120 Intermediate Organic Chemistry	3	CHM3120 Intermediate Organic Chemistry	3
CHM3122 Applications of Spectroscopy in Chemistry	3	CHM3122 Applications of Spectroscopy in Chemistry	3
CHM3126 Laboratory of Organic Chemistry	3	CHM3126 Laboratory of Organic Chemistry	3
CHM3140 Quantum Chemistry	3	CHM3140 Quantum Chemistry	3
~~CHM3150 Transition Metal Chemistry~~	~~3~~	**CHM3350** Transition Metal Chemistry	**3**

~~CHM3156 Inorganic Chemistry Laboratory~~	~~3~~
Winter:	
~~CHM2118 Laboratory of Analytical Chemistry~~	~~2~~
~~CHM2130~~ Physical Chemistry: Introduction to the molecular properties of matter	3
~~CHM2136 Laboratory of Physical Chemistry~~	~~2~~
CHM2311 Introduction to Structure and Bonding	3
~~CHM3125~~ Polymer and Applied Chemistry	3
~~CHM3336 Laboratory of Physical Chemistry~~	~~2~~
~~CHM3371 Molecular Spectroscopy and Statistical Mechanics~~	~~3~~
CHM4116 Advanced Instrumental Analysis Laboratory	3
PHY2100 Fundamentals of Applied Physics III	3
Five credits from the list of science electives: (A minimum of two courses)	5
Fall:	
BCH3170 Molecular Biology	3
or	
BIO3170 Molecular Biology	3
~~BIO2127~~ Introduction to Plant Science: Biodiversity to Biotechnology	~~5~~
or	
~~BIO2125~~ Animal Form and Function	~~5~~
CHG2317 Introduction to Chemical Process Analysis and Design	3
GEO2163 Introduction to Mineralogy	3
GEO3163 Igneous Petrology	3
GEO3164 Metamorphic Petrology	3
GEO3342 Introduction to Hydrogeology	3
GEO4382 Advanced Geochemistry	3
~~MAT2122 Calculus III~~	~~3~~
MAT2324 Ordinary Differential Equations and Laplace Transformation	3
or	
MAT2331 Ordinary Differential Equations and Numerical Methods	4
MAT3121 Complex Analysis I	3
MAT3320 Mathematics for Engineers	3
MIC5124 Immunology	3
MIC5326 Virology	3
~~PHY2106 Physics Laboratory~~	~~3~~
~~PHY2310 Applied Optics~~	~~3~~
PHY4330 Advanced Dynamics	3
Winter:	
~~BCH2140~~ Introduction to Biochemistry	~~3~~
BCH3120 General Intermediary Metabolism	3
~~BIO2123~~ Genetics	~~4~~
CHG2319 Elements of Chemical Process Synthesis	3
CHM2313 Environmental Chemistry	3
GEO2164 Analytical Methods in Mineralogy	3
GEO3382 Geochemistry	3
GEO4342 Groundwater Geochemistry	3
~~MAT2125 Mathematical Analysis I~~	~~3~~
~~PHY2108 Physics Laboratory~~	~~2~~

Winter:	
CHM2330 Physical Chemistry: Introduction to the molecular properties of matter	3
CHM2311 Introduction to Structure and Bonding	3
CHM4155 Polymer and Applied Chemistry	3
CHM3373 Molecular Spectroscopy and Statistical Mechanics	3
CHM4116 Advanced Instrumental Analysis Laboratory	3
PHY2100 Fundamentals of Applied Physics III	3
Five credits from the list of science electives: (A minimum of two courses)	5
Fall:	
BCH3170 Molecular Biology	3
or	
BIO3170 Molecular Biology	3
BIO2137 Introduction to Plant Science: Biodiversity to Biotechnology	**3**
or	
BIO2135 Animal Form and Function	**3**
CHG2317 Introduction to Chemical Process Analysis and Design	3
GEO2163 Introduction to Mineralogy	3
GEO3163 Igneous Petrology	3
GEO3164 Metamorphic Petrology	3
GEO3342 Introduction to Hydrogeology	3
GEO4382 Advanced Geochemistry	3
MAT2324 Ordinary Differential Equations and Laplace Transformation	3
or	
MAT2331 Ordinary Differential Equations and Numerical Methods	4
MAT3121 Complex Analysis I	3
MAT3320 Mathematics for Engineers	3
MIC5124 Immunology	3
MIC5326 Virology	3
PHY4330 Advanced Dynamics	3
Winter:	
BCH2333 Introduction to Biochemistry	3
BCH3120 General Intermediary Metabolism	3
BIO2133 Genetics	**3**
CHG2319 Elements of Chemical Process Synthesis	3
CHM2313 Environmental Chemistry	3
GEO2164 Analytical Methods in Mineralogy	3
GEO3382 Geochemistry	3
GEO4342 Groundwater Geochemistry	3

A minimum of 26 credits of electives	**26**
Students must take six three credits approved courses at the 3000-4000 level. At least one of their courses must be in each of the three areas of concentration (Organic/Medicinal, Inorganic, Physical/Theoretical) list below.	
The other three may come from any of the following four groups of Chemistry courses.	
Up to two of these three courses may come from the 3000-4000 level courses in the other departments which are listed as science electives.	
Organic/Medicinal:	
CHM4123 Medicinal Chemistry	3
CHM4139 Enzyme and Bio-organic Chemistry	3
CHM4325 Advanced Organic Synthesis and Reaction Mechanism	3
CHM4328 Special Topics in Organic Chemistry	3
Inorganic:	
CHM4311 Advanced Topics in Inorganic Chemistry	3
CHM4313 Solid State Chemistry	3
CHM4317 Organometallic Chemistry	3
CHM4319 Bio-organic Chemistry	3
Physical/Theoretical	
CHM4143 Computational Chemistry II	3
CHM4182 Molecular Dynamics in Chemistry	3
CHM4340 Applications of Theoretical Chemistry	3
CHM4381 Photochemistry	3
CHM4390 Special Topics in Physical Chemistry	3
CHM4391 Selected Topics in Physical Chemistry	3
Interdisciplinary:	
CHM4141 Computational Chemistry I	3
CHM4146 Computational Chemistry Laboratory	3
CHM4315 Advanced Analytical Chemistry	3
CHM4380 Principles of Instrumentation and Measurement	3
Twelve credits of non-science electives	**12**
~~**Honours Research Project**~~	~~**8**~~
One of the following three options:	
~~CHM4006 Honours Research Project~~	~~7~~
~~CHM4910 Seminar~~	~~1~~
or	
Coop students:	
CHM4916 Laboratory Research Project	4
~~CHM4910 Seminar~~	~~1~~
Additional 3 credits from the science electives list or from Chemistry courses at the 3000-4000 level	3
Regular or Coop students:	
CHM4900 Directed Studies in Chemistry	3
Additional 5 credits from the science electives list or from the Chemistry courses at the 3000-4000 level	5

A minimum of 26 credits of electives	**26**
Students must take six three credits approved courses at the 3000-4000 level. At least one of their courses must be in each of the three areas of concentration (Organic/Medicinal, Inorganic, Physical/Theoretical) list below.	
The other three may come from any of the following four groups of Chemistry courses.	
Up to two of these three courses may come from the 3000-4000 level courses in the other departments which are listed as science electives.	
Organic/Medicinal:	
CHM4123 Medicinal Chemistry	3
CHM4139 Enzyme and Bio-organic Chemistry	3
CHM4325 Advanced Organic Synthesis and Reaction Mechanism	3
CHM4328 Special Topics in Organic Chemistry	3
Inorganic:	
CHM4311 Advanced Topics in Inorganic Chemistry	3
CHM4313 Solid State Chemistry	3
CHM4317 Organometallic Chemistry	3
CHM4319 Bio-organic Chemistry	3
Physical/Theoretical	
CHM4143 Computational Chemistry II	3
CHM4182 Molecular Dynamics in Chemistry	3
CHM4340 Applications of Theoretical Chemistry	3
CHM4381 Photochemistry	3
CHM4390 Special Topics in Physical Chemistry	3
CHM4391 Selected Topics in Physical Chemistry	3
Interdisciplinary:	
CHM4141 Computational Chemistry I	3
CHM4146 Computational Chemistry Laboratory	3
CHM4315 Advanced Analytical Chemistry	3
CHM4380 Principles of Instrumentation and Measurement	3
Twelve credits of non-science electives	**12**
Honours Research Project	**9**
One of the following three options:	
CHM4010 Honours Project/Seminar	**9**
or	
Coop students:	
CHM4916 Laboratory Research Project	**3 (4)**
Additional 3 credits from the science electives list or from Chemistry courses at the 3000-4000 level	3
Regular or Coop students:	
CHM4900 Directed Studies in Chemistry	3
Additional 5 credits **(minimum)** from the science electives list or from the Chemistry courses at the 3000-4000 level	5