

<p align="center"><b>BSc with concentration in Biochemistry / BASc in Chemical Engineering (Biotechnology) (185 credits)</b></p>	<p align="center"><b>BSc with concentration in Biochemistry / BASc in Chemical Engineering (Biotechnology) (174 credits)</b></p>	
<p align="center"><b>Requirements 2003-2005</b></p>	<p align="center"><b>New structure 2006</b></p>	
<p><del>Compulsory credits in first year</del> 38</p>	<p>Compulsory first year credits <b>30</b></p>	
<p><b>Fall:</b></p>	<p><b>Fall:</b></p>	
<p><del>BIO1120</del> Introduction to Organismal Biology 4</p>	<p><b>BIO1130</b> Introduction to Organismal Biology <b>3</b></p>	
<p><del>CHM1310</del> Principles of Chemistry 4</p>	<p><b>CHM1311</b> Principles of Chemistry <b>3</b></p>	
<p>MAT1320 Calculus I 3</p>	<p>MAT1320 Calculus I 3</p>	
<p>MAT1341 Introduction to Linear Algebra 3</p>	<p>MAT1341 Introduction to Linear Algebra 3</p>	
<p><del>PHY1201</del> Physics Laboratory 3</p>	<p><b>PHY1121</b> Fundamentals of Physics I 3</p>	
<p><del>PHY1101</del> Fundamentals of Physics I 3</p>	<p><b>PHY1121</b> Fundamentals of Physics I 3</p>	
<p><b>Winter:</b></p>	<p><b>Winter:</b></p>	
<p><del>BIO1110</del> Introduction to Cell Biology 4</p>	<p><b>BIO1140</b> Introduction to Cell Biology <b>3</b></p>	
<p><del>CHG1120</del> Introduction to Chemical Engineering 4</p>	<p><b>CHG1125</b> Introduction to Chemical Engineering <b>3</b></p>	
<p><del>CHM1320</del> Organic Chemistry I 4</p>	<p><b>CHM1321</b> Organic Chemistry I <b>3</b></p>	
<p>MAT1322 Calculus II 3</p>	<p>MAT1322 Calculus II 3</p>	
<p><del>PHY1102</del> Fundamentals of Physics II 3</p>	<p><b>PHY1122</b> Fundamentals of Physics II 3</p>	
<p><b>Compulsory credits in second year</b> 39</p>	<p><b>Compulsory second year credits</b> <b>36</b></p>	
<p><b>Fall:</b></p>	<p><b>Fall:</b></p>	
<p>CHM2120 Organic Chemistry II 3</p>	<p>CHM2120 Organic Chemistry II 3</p>	
<p><del>CHM2126</del> Laboratory of Organic Chemistry II -2</p>	<p><b>CHM2123</b> Laboratory of Organic Chemistry II <b>3</b></p>	
<p>CHM2131 Chemical Thermodynamics of Gases and Solutions 3</p>	<p>CHM2131 Chemical Thermodynamics of Gases and Solutions 3</p>	
<p><del>CHM2154</del> Analytical Chemistry 3</p>	<p><b>CHM2354</b> Analytical Chemistry 3</p>	
<p><del>GNG1104</del> Fundamentals of Engineering Computation -4</p>	<p><b>GNG1106</b> Fundamentals of Engineering Computation <b>3</b></p>	
<p><del>MAT2334</del> Ordinary Differential Equations and Numerical Methods 4</p>	<p><b>MAT2384</b> Ordinary Differential Equations and Numerical Methods <b>3</b></p>	
<p><b>Winter:</b></p>	<p><b>Winter:</b></p>	
<p><del>BCH2140</del> Introduction to Biochemistry 3</p>	<p><b>BCH2333</b> Introduction to Biochemistry 3</p>	
<p><del>BCH2336</del> Biochemistry Laboratory I -2</p>	<p><b>BIO2133</b> Genetics <b>3</b></p>	
<p><del>BIO2123</del> Genetics 4</p>	<p><b>CHM2330</b> Physical Chemistry: Introduction to the molecular properties of matter 3</p>	
<p><del>CHM2118</del> Laboratory of Analytical Chemistry -2</p>	<p>ENG1112 Technical Report Writing 3</p>	
<p><del>CHM2130</del> Physical Chemistry: Introduction to the molecular properties of matter 3</p>	<p>MAT2377 Probability and Statistics for Engineers 3</p>	
<p>ENG1112 Technical Report Writing 3</p>	<p><b>Compulsory credits in third year</b> 39</p>	
<p>MAT2377 Probability and Statistics for Engineers 3</p>	<p><b>Fall:</b></p>	
<p><b>Compulsory credits in third year</b> 39</p>	<p>BCH3170 Molecular Biology 3</p>	
<p><b>Fall:</b></p>	<p>BCH3356 Molecular Biology Laboratory 3</p>	
<p>BCH3170 Molecular Biology 3</p>	<p>BIO3124 General Microbiology 3</p>	
<p>BCH3356 Molecular Biology Laboratory 3</p>	<td data-bbox="165 1432 808 1465"> <p>BIO3124 General Microbiology 3</p> </td>	<p>BIO3124 General Microbiology 3</p>

CHG2312 Fluid Flow	3	CHG2312 Fluid Flow	3
CHG2317 Introduction to Chemical Process Analysis and Design	3	CHG2317 Introduction to Chemical Process Analysis and Design	3
MAT2322 Calculus III for Engineers	3	MAT2322 Calculus III for Engineers	3
Three credits of complementary studies electives	3	Three credits of complementary studies electives	3
<b>Winter:</b>		<b>Winter:</b>	
BCH3120 General Intermediary Metabolism	3	BCH3120 General Intermediary Metabolism	3
BCH3125 Protein Structure and Function	3	BCH3125 Protein Structure and Function	3
BCH3346 Biochemistry Laboratory II	3	BCH3346 Biochemistry Laboratory II	3
CHG2314 Heat Transfer Operation	3	CHG2314 Heat Transfer Operation	3
ECO1192 Engineering Economics	3	ECO1192 Engineering Economics	3
HIS2129 Technology, Society and Environment since 1800	3	HIS2129 Technology, Society and Environment since 1800	3
or		or	
PHI2394 Scientific Thought and Social Values	3	PHI2394 Scientific Thought and Social Values	3
<del>Compulsory credits in fourth year</del>	<del>35</del>	Compulsory fourth year credits	<b>33</b>
<b>Fall:</b>		<b>Fall:</b>	
CHG3316 Transport Phenomena	3	CHG3316 Transport Phenomena	3
CHG3324 Fundamentals and Applications of Chemical Engineering Thermodynamics	3	CHG3324 Fundamentals and Applications of Chemical Engineering Thermodynamics	3
CHG3331 Application of Mathematical Methods to Chemical Engineering	3	CHG3331 Application of Mathematical Methods to Chemical Engineering	3
CHG3335 Process Control	3	CHG3335 Process Control	3
CHG3337 Data Collection and Interpretation	3	CHG3337 Data Collection and Interpretation	3
Three credits of chemical engineering electives	3	Three credits of chemical engineering electives	3
<b>Winter:</b>		<b>Winter:</b>	
CHG3111 Unit Operations	3	CHG3111 Unit Operations	3
CHG3112 Process Synthesis, Design and Economics	3	CHG3112 Process Synthesis, Design and Economics	3
CHG3122 Chemical Engineering Practice	3	CHG3122 Chemical Engineering Practice	3
CHG3127 Chemical Reaction Engineering	3	CHG3127 Chemical Reaction Engineering	3
CHG3326 Principles of Phase Equilibria and Chemical Reaction Equilibria	3	CHG3326 Principles of Phase Equilibria and Chemical Reaction Equilibria	3
<del>Compulsory credits in fifth year</del>	<del>36</del>	Compulsory fifth year credits	<b>36</b>
<b>Fall:</b>		<b>Fall:</b>	
CHG4305 Advanced Materials in Chemical Engineering	3	CHG4305 Advanced Materials in Chemical Engineering	3
CHG4116 Chemical Engineering Laboratory	6	CHG4116 Chemical Engineering Laboratory	6
CHG4343 Computer-Aided Design in Chemical Engineering	3	CHG4343 Computer-Aided Design in Chemical Engineering	3
CHG4381 Introduction to Biochemical Engineering	3	CHG4381 Introduction to Biochemical Engineering	3
Technical electives	3	Technical electives	3
<b>Winter:</b>		<b>Winter:</b>	
CHG4300 Thesis and Seminar	6	CHG4300 Thesis and Seminar	6
or six credits of technical electives		or six credits of technical electives	
CHG4306 Microelectronics Manufacturing Processes	3	CHG4306 Microelectronics Manufacturing Processes	3
CHG4307 Clean Processes and Sustainable Development	3	CHG4307 Clean Processes and Sustainable Development	3
CHG4244 Plant Design Project	3	CHG4244 Plant Design Project	3
GNG4170 Engineering Law	3	GNG4170 Engineering Law	3
Consult the list of technical electives shown in the regular Chemical Engineering program.		Consult the list of technical electives shown in the regular Chemical Engineering program.	