

# Bioengineering Curriculum - Stream 2 (Biomolecular & Cellular Engineering)

CEGEP Entry

1st Semester (Fall)		17 credits	Prerequisites/Co-requisites
BIEN 200	Introduction to Bioengineering	2	P - Permission of Instructor
CHEM 212	Introductory Organic Chemistry 1	4	P - CHEM 110 / C - CHEM 120
CIVE 281	Analytical Mechanics	3	C - MATH 262, MATH 263
MATH 262	Intermediate Calculus	3	P - MATH 141, MATH 133
MATH 263	Ordinary Differential Equations for Engineers	3	C - MATH 262
MECH 210	Mechanics 1	2	-
2nd Semester (Winter)		16 credits	Prerequisites/Co-requisites
BIOL 112	Cell and Molecular Biology	3	-
BREE 301	Biothermodynamics	3	-
COMP 208	Computers in Engineering	3	P - MATH 140, MATH 141
CS	Complimentary Studies - Group B (Humanities)	3	-
EC	Elective - 1	3	-
FACC 100	Introduction to the Engineering Profession	1	-

## Technical Complementary Courses - Bioengineering

		Credits	Prerequisites/Co-requisites
BIEN 310	Introduction to Biomolecular Engineering	3	P - Permission of Instructor
BIEN 320	Molecular, Cellular, and Tissue Biomechanics	3	P - Permission of Instructor
BIEN 330	Introduction to Tissue Engineering	3	P - Permission of Instructor
BIEN 550	Biomolecular Devices	3	P - Permission of Instructor
BIEN 570	Active Mechanics in Biology	3	P - Permission of Instructor
BIOC 311	Metabolic Biochemistry-	3	*BIOL 200, BIOL 201 or BIOC 212, CHEM 222
BMDE 509	Quantitative Analysis and Modelling of Cellular Processes	3	P - Permission of Instructor
CHEE 370	Elements of Biotechnology	3	-
CHEE 390	Computational Methods in Chemical Engineering	3	*CHEE 204, COMP 208, MATH 263
CIVE 557	Microbiology for Environmental Engineering	3	P - Permission of Instructor
CIVE 558	Biomolecular Techniques for Environmental Engineering	3	P - CIVE 225 or Permission of Instructor
PHYS 534	Nanoscience and Nanotechnology	3	-

\*Prerequisites waived for Bioengineering students

\*\*Prerequisites replaced with BIEN 350 and BIEN 462, and MATH 223 waived for Bioengineering students

Last update: July 2016