

# ENGINEERING CHEMISTRY, B.A.SC. (CLASS OF 2028)

General First Year 2024-2025 (<https://www.queensu.ca/academic-calendar/engineering-applied-sciences/first-year-studies/>)

## Second Year CORE 2025-2026

Code	Title	Units
CHEE 209	Analysis of Process Data	3.50
CHEE 221	Chemical Processes and Systems	3.50
CHEE 270	ChemEtronics	3.00
ENCH 211	Main Group Chemistry	4.75
ENCH 212	Principles of Chemical Reactivity	4.00
MTHE 225	Ordinary Differential Equations	3.50
APSC 200	Engineering Design & Practice II	4.00
APSC 293	Engineering Communications 2	1.00
CHEE 210	Thermodynamics of Energy Conversion Systems	3.50
CHEE 222	Process Dynamics and Numerical Methods	3.50
CHEE 223	Fluid Mechanics	3.50
ENCH 222	Methods of Structure Determination	3.75
ENCH 245	Applied Organic Chemistry I	4.75
<b>Total Units</b>		<b>46.25</b>

## Third Year CORE 2026-2027

Code	Title	Units
CHEE 311	Fluid Phase and Reaction Equilibrium	3.50
CHEE 321	Chemical Reaction Engineering	3.50
CHEE 330	Heat and Mass Transfer	3.50
CHEE 380	Biochemical Engineering	3.50
ENCH 312	Transition Metal Chemistry	3.50
APSC 221	Economic and Business Practice	3.00
CHEE 324	Organic Process Development	3.50
CHEE 331	Design of Unit Operations	4.50
CHEE 361	Engineering Communications, Ethics and Professionalism	1.00
CHEE 363	Electrochemical Engineering	3.50
ENCH 321	Instrumental Chemical Analysis	3.00
ENCH 399	Experimental Chemistry II	3.50
Electives		3.00
<b>Total Units</b>		<b>42.50</b>

## Fourth Year CORE 2027-2028

Code	Title	Units
CHEE 460	Applied Surface and Colloid Science	3.50
CHEE 472	Chemical Process Design I	3.50

ENCH 313	Quantum Mechanics	3.50
ENCH 417	Research Project	9.00
CHEE 426	Design of Electrochemical Sensors	3.50
CHEE 463	Electrochemical Energy Systems	3.50
Electives		15.00

**Total Units 41.50**

## Technical Electives

Students in the ENCH program are required to take two (2) courses from the approved Group A list (any combination from Materials, Environment, Biosciences, and General lists), and one (1) course from the approved Group B list.

Engineering Chemistry: Technical Electives (<https://www.queensu.ca/academic-calendar/engineering-applied-sciences/academic-plans/engineering-chemistry/engineering-chemistry-technical-electives/>)

## Complementary Studies

Students choose a total of 9 credits from the approved Lists A or B, of which 3 credits must be taken from List A.

Refer to the Complementary Studies section of this calendar for details regarding the requirements for all Engineering plans.

## Engineering Economics

To meet the engineering economics requirement, students take APSC 221 (<https://www.queensu.ca/academic-calendar/search/?P=APSC%20221>) Economic And Business Practice.

## Communications

To meet the communications requirement, students take APSC 293 (<https://www.queensu.ca/academic-calendar/search/?P=APSC%20293>) Engineering Communications and CHEE 361 (<https://www.queensu.ca/academic-calendar/search/?P=CHEE%20361>) Engineering Communications, Ethics & Professionalism (these are **Core** courses).