

Curricular Reform in Chemistry and Biology at Dordt College

- *Foundational Ideas:*
 - *Curiosity*
 - *Interdisciplinary Thinking*
 - *Learning by Doing*
 - *Flexibility and choice*
 - *Preparative*

The Components of Our New Curricula

- *Classes*
- *Research*
- *Leadership and Experience Opportunities*

Classes: B.Sc. In Chemistry

	<u>CRN</u>	<u>Credits</u>	<u>Course Title</u>	<u>Req or Elec?</u>	<u>New or Existing</u>	<u>Schedule</u>
Preparation						
			Sufficient High School Chemistry or Testing out			
	101	4	Foundational Topics in Chemistry	Elec	Existing	F/S
Core Chemistry						
	111	4	Principles of Chemistry	Req	New	F/S
	212	4	Chemical Analysis	Req	Existing	S
	225	4	Organic Chemistry: Structure and Mechanism	Req	Modified	F
	231	4	Foundations in Physical Chemistry	Req	New	F (Odd) starting 2015
	261	3	Integrated Biochemistry and Molecular Biology	Req	Modified	S
	271	3	Inorganic Chemistry	Req	Existing	S (Odd) Will be offered in Fall 2014

Classes: B.Sc. In Chemistry

	<u>CRN</u>	<u>Credits</u>	<u>Course Title</u>	<u>Req or Elec?</u>	<u>New or Existing</u>	<u>Schedule</u>
Core Enrichment						
	180	1	First Semester Seminar	Req	New	F
	Phys Sci 201	3	ART: Persp in Phys Science	Req	Existing	S Even
	355	1	Apprenticeship in Chemical Research	Rec	New	F/S
	358	1	Introduction to Chemical Research	Req	New	F/S
	380	3	Directed Senior Research	Req	New	F/S

Classes: B.Sc. In Chemistry

	<u>CRN</u>	<u>Credits</u>	<u>Course Title</u>	<u>Req or Elec?</u>	<u>New or Existing</u>	<u>Schedule</u>
Advanced Electives (need 4 courses)						
	251	3	Environmental Chemistry	Elec	Existing	S Odd
	321	3	Organic Chemistry: Synthesis and Mechanism	Elec	Modified	S Even Starts in 2016
	322	3	Organic Chemistry: Bioorganic	Elec	Modified	S Odd Starts in 2015
	333	3	Quantum Mechanics	Elec	Existing	F even Fall 2014
	331	3	Thermodynamics and Kinetics	Elec	Existing	S even Spring 2016
	361	3	Advanced Biochemistry	Elec	Modified	F odd (Fall 2015)
	365	3	Solar System Chemistry	Elec	New	S odd TBD

Classes: B.Sc. In Chemistry

	<u>CRN</u>	<u>Credits</u>	<u>Course Title</u>	<u>Req or Elec?</u>	<u>New or Existing</u>	<u>Schedule</u>
Advanced Labs (need 3)						
	252	1	Environmental Chemistry Lab	Elec	Existing	S Odd
	323	1	Advanced Organic Lab	Elec	Modified	S Even Starts in 2016
	335	1	Advanced Physical Chemistry Lab	Elec	Existing	F Even
	362	1	Advanced Biochemistry Lab	Elec	Modified	F Odd
	312	3	Advanced Instrumentation Lab	Elec	Existing	S Odd

Classes: B.Sc. In Chemistry

	<u>CRN</u>	<u>Credits</u>	<u>Course Title</u>	<u>Req or Elec?</u>	<u>New or Existing</u>	<u>Schedule</u>
Cognates						
	Bio105	4	Molecular and Cellular Biology I		Existing	Fall
	or					
	Env 151/161	4	Intro to Env Sci with Lab		Existing	F/S
	Math152	4	Calc I	Req	Existing	F
	Math153	4	Calc II	Req	Existing	F/S
	Phy115	4	Algebra Physics I		Existing	F
	Phy116	4	Algebra Physics II		Existing	S
	or					
	Phy201	4	Calc Physics I		Existing	F
	Phy202	4	Calc Physics II		Existing	S
	Phy203	4	Calc Physics III		Existing	F

Differences between B.Sc. & B.A.

Requirements	B.Sc.	B.A.
Core Chem	All 6 courses	All 6 courses
Core Enrichment	Requires Research	Alternatives to Research
Advanced Electives	4 courses	2 courses
Advanced Labs	3 labs	2 labs
Cognates	Same	Same

Planning your schedule

Academic Year	Fall Courses	Spring Courses
All years	101, 111 225 (Organic)	111, 212 (Quant Analysis) 261 (Biochem)
2014-2015	271 (Inorganic) 333 (QM)	251 (Enviro Chem) + Lab 312 (Instr Analysis) 322 (BioOrg)
2015-2016	231 (Pchem) 361 (Adv BCH) 362 (BCH Lab)	201 (perspectives) 221 + 223 (Syn Org with Lab) 331 (Thermo)
2016-2017	333 (QM) 335 (Adv Pchem L)	251 (Enviro Chem) + Lab 271 (Inorganic) 312 (Instr Analysis) 322 (BioOrg) 365 (Solar System)
2017-2018	231 (Pchem) 361 (Adv BCH) 362 (BCH Lab)	201 (perspectives) 221 + 223 (Syn Org with Lab) 331 (Thermo)