

Dept. of Education and Allied Studies
 John Carroll University – Teacher Education Program
 Adolescent/Young Adult Content Advisement form
 Revised: 9.20.2011

Curriculum Content: Life Science/Chemistry
 (Biology Major/Chemistry Minor) 71 – 73 Semester Hours required

Praxis test – Biology: Content Knowledge (20235) or Chemistry: Content Knowledge (20245)

Course #	Course Title	Hours	Grade	Sem. Offered
BL 155/156	Principles of Biology I & II	6		
BL 157/158	Principles of Biology Lab I & II	2		
BL 213	Genetics	4		
BL 222	General Ecology	3		
BL 310/310L	Microbiology & Lab	4		Every semester
BL 444/444L	Advanced Ecology & Lab	4		
CH 141/143 +	General Chemistry I & Lab	5		Fall
CH 142/144 +	General Chemistry II & Lab	5		Spring
CH 221/223	Organic Chemistry I & Lab	4		Fall
CH 222/224	Organic Chemistry Lab II & Lab	4		Spring
CH 261/263	Analytical Chemistry and Lab	4		Spring
CH 361	Introductory Physical Chemistry & Lab	3		Fall
CH 367	Physical Chemistry Lab	1		Fall & Spring
CH 441/443	Instrumental Analysis and Lab	4		Fall
CH 478	Chemistry Seminar	0		Fall & Spring
CH 431	General Biochemistry	4		Spring
PH 125/125L	General Physics I & Lab	4		Fall
PH 126/126L	General Physics II & Lab	4		Spring
MT 135	Calculus and Analytic Geometry I	4		Fall
MT 136	Calculus and Analytic Geometry II	4		Spring

Select One:

PH 101/101L	Earth Science I & Lab	4		
PH 102/102L	Earth Science II & Lab	4		

Cell to Organism Courses

Select Two:

BL 350	Vertebrate Anatomy	5		
BL 360	Human Physiology	4		
BL 420	Plant Physiology	4		
BL 450	Organogenesis & Lab	4		
BL 475	Endocrinology	3		

Cell to Organism Labs

Select at Least One:

BL 350L	Vertebrate Anatomy Lab	0		
BL 254L	Comparative Vertebrate Embryology Lab	0		
BL 360L	Human Physiology Lab	0		
BL 450L	Organogenesis Lab	1		
BL 478	Biology Seminar	1		

Select One:

PL 314*	Science, Technology, and Ethics	3		
PL 375*	Philosophy of Science	3		

Note: +CH 151/153 (5 cr) may substitute for CH 141 – 144 with Chair's approval.
 ++CH 365/366/367 (7cr) may substitute for CH 361/367 with Chair's approval
 *Course meets Division V Core Requirement.

Revised Fall 2010