



Biology and Chemistry
College of Science and Engineering
Curriculum Maps | 2022

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BIOLOGY Curriculum Map

- * **INTRODUCTORY**- introduce learning goals
(update or initial reflection)
- * **DEVELOPMENTAL**- develop/emphasize
learning goals (places of formative assessment)
- * **MASTERY**- mastery/measure learning goals
(assignments, capstones, places of summative
assessment)

CORE COURSE REQUIREMENTS			Scientifically investigate biological based problems, effectively communicate their research	Knowledge of current biological trends/concepts/facts	Integrate Christian faith with the discipline of biology	Apply Christian worldview to ethical dilemmas in medicine/research/environment	Entry into graduate programs	CORE PROGRAM LEARNING OUTCOME #6	CORE PROGRAM LEARNING OUTCOME #7	CORE PROGRAM LEARNING OUTCOME #8
Course Code	Required/ Elective	Course Name								
BIO 111	R	Introductory Biology	I							
BIO 112	R	Introductory Biology	I		I					
BIO 209	R	Methods in Biotechnology	I				I			
BIO 372	R	Introduction to Biological Research	D	D			D			
BIO 312	R	Ecology	D	D	D					
BIO 456	R	Biomedical Ethics		D	D	M	D			
BIO 451	R	Biology Seminar	M	M	D	D	M			
BIO 499	R	Research/Senior Paper	M	M	D	M	D			
BIO 310	E	Microbiology	M	D			D			
BIO 311	E	Medical Genetics	D	D			D			
BIO 411	E	Molecular Cell Biology	D	D			D			
BIO 410	E	Medical Parasitology		D			D			
BIO 421	E	General and Comparative Physiology		D						
BIO 431	E	Developmental Biology		D			D			
BIO 457	E	Principles of Immunology		M	D		D			
MAT 106	E	Trigonometry								
MAT 201	E	Calculus								
CHE 111	R	General Chemistry								
CHE 112	R	General Chemistry								
CHE 211	R	Organic Chemistry								
CHE 212	R	Organic Chemistry								

Biomedical Chemistry Curriculum Map

* **INTRODUCTORY**- introduce learning goals
(update or initial reflection)

* **DEVELOPMENTAL**- develop/emphasize learning
goals (places of formative assessment)

* **MASTERY**- mastery/measure learning goals
(assignments, capstones, places of summative
assessment)

CORE COURSE REQUIREMENTS			Use of scientific method	Peer-reviewed chemical literacy	Safe laboratory technique	Scientific writing and computer technology	Effective team work and leadership	Holy Spirit-directed research practices	Demonstrate knowledge on pre-professional exam
Course Code	Required/ Elective	Course Name							
CHE 111	R	General Chemistry I and lab	I		I		I		I
CHE 112	R	General Chemistry II and lab	I		I		I	I	I
CHE 211	R	Organic Chemistry I and lab	I		D	I	D	I	D
CHE 212	R	Organic Chemistry II and lab	I		D	I	D	D	D
CHE 300	R	Quantitative Analysis and lab	D		D			D	
CHE 303	R	Physical Chemistry I and lab	D		D		D	D	
CHE 304	E	Physical Chemistry II	D						
CHE 400	R	Chemical Instrumentation and lab			M		M	M	D
CHE 449	R	Chemistry Research	M	I					
CHE 452	R	Seminar				M			M
CHE 455	E	Oncological Chemistry	D					D	
CHE 456	E	Inorganic Chemistry		D		D			
CHE 459	E	Biochemistry	D						
CHE 469	E	Biochemistry II	D						
CHE 473	E	Medicinal Chemistry	D	D					
CHE 499	R	Individual Research and Paper	M	M	M	M		M	
MAT 201	R	Calculus I	D			D			
MAT 202	R	Calculus II	D			D			
PHP 100	R	Pre-health Seminar				I	I		
PHY 111	R	(General or) Physics I and lab	D						
PHY 112	R	(General or) Physics II and lab	D						
BIO 111	R	Introductory Biology I and lab	I		I				
BIO 112	R	Introductory Biology II and lab	I			I			
BIO 209	R	Methods in Biotechnology	D		D		D	D	
BIO 312	E	Human Ecology and lab		I		D	D		
BIO 458	E	Marine Ecology and lab		D		D	D		
BIO 310	E	Microbiology and lab	D		D				
BIO 311	E	Medical Genetics and lab	M		D	I	M	D	
BIO 411	E	Molecular Cell Biology and lab	M		M				
BIO 421	E	Comparative Physiology and lab	D		M				
BIO 431	E	Developmental Biology and lab	D		M				
BIO 457	E	Principles of Immunology and lab	M		M	M			

Chemistry Curriculum Map

* **INTRODUCTORY**- introduce learning goals
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* **DEVELOPMENTAL**- develop/emphasize learning
goals (places of formative assessment)

* **MASTERY**- mastery/measure learning goals
(assignments, capstones, places of summative
assessment)

CORE COURSE REQUIREMENTS			Use of scientific method	Peer-reviewed chemical literacy	Safe laboratory technique	Scientific writing and computer technology	Effective team work and leadership	Holy Spirit-directed research practices
Course Code	Required/ Elective	Course Name						
CHE 111	R	General Chemistry I and lab	I		I		I	
CHE 112	R	General Chemistry II and lab	I		I		I	I
CHE 211	R	Organic Chemistry I and lab			D	I	D	I
CHE 212	R	Organic Chemistry II and lab			D	I	D	D
CHE 300	R	Quantitative Analysis and lab	D		D			D
CHE 303	R	Physical Chemistry I and lab	D		D		D	D
CHE 304	R	Physical Chemistry II	D					
CHE 400	R	Chemical Instrumentation and lab			M		M	M
CHE 449	R	Chemistry Research	M	I				
CHE 452	R	Seminar				M		
CHE 455	E	Oncological Chemistry	D					D
CHE 456	R	Inorganic Chemistry		D		D		
CHE 459	E	Biochemistry	D		D		M	
CHE 473	E	Medicinal Chemistry	D	D				
CHE 499	R	Individual Research and Paper	M	M	M	M		M
MAT 201	R	Calculus I	D			D		
MAT 202	R	Calculus II	D			D		
MAT 211	R	Differential Equations	D			D		
CSC 111	R	Introduction to Computing				I		
PHY 111	R	(General or) Physics I and lab	D					
PHY 112	R	(General or) Physics II and lab	D					

Global Environmental Sustainability Curriculum Map

- * **INTRODUCTORY**- introduce learning goals (update or initial reflection)
- * **DEVELOPMENTAL**- develop/emphasize learning goals (places of formative assessment)
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CORE COURSE REQUIREMENTS			Understand the interdisciplinary nature of environmental issues	Applicability of env. sustainability with companies/government agencies/private groups	Understand/apply Biblical stewardship principles to environmental issues	Develop practical skills marketable for employment
Course Code	Required /Elective	Course Name				
EVR 201	R	Global Development and Sustainability	I	I	M	I
EVR 250	R	Environmental Science I	I		M	I
EVR 251	R	Environmental Science II	D		D	I
EVR 380	R	Environmental Sustainability Internship		M		M
EVR 390	R	Environmental Research	D	D		D
EVR 451	R	Environmental Seminar	M	M	M	M
EVR 499	R	Senior Paper		D	M	M
BIO 456	R	Biomedical Ethics			M	
BIO 312	R	Human Ecology	M		D	D
EVR 360	R	Readings in Environmental Science	M			
BIO 111	E	Introductory Biology	I			
BIO 112	E	Introductory Biology	I		I	
PSC 201	E	Physical science	I			
EVR 380	R	Env. Sustainability Internship		M		
EVR 390	R	Environmental Research	M	M	M	D
CHE 111	E	General Chemistry				
CHE 112	E	General Chemistry				
BIO 310	E	Microbiology	I			
BIO 410	E	Medical Parasitology	D			
BIO 104	E	Tropical Biology	I	I	I	
PHS 223	E	Human Anatomy				
PHS 224	E	Human Physiology				
AUS courses	E	Any AUS course				M
BUS 202	E	Principles of Economics II	I			
MGT 465	E	Administration of nonprotein organization				D
MGT 421	E	Entrepreneurship		D		D

Medical Molecular Biology Curriculum Map

* **INTRODUCTORY**- introduce learning goals
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learning goals (places of formative assessment)

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(assignments, capstones, places of summative
assessment)

CORE COURSE REQUIREMENTS			Scientifically investigate biological based problems, effectively communicate their research	Knowledge of current biological trends/concepts/facts	Integrate Christian faith with the discipline of biology	Apply Christian worldview to ethical dilemmas in medicine/research/environment	Entry into Graduate programs	Entry into Medical school
Course Code	Required /Elective	Course Name						
BIO 111	R	Introductory Biology	I					I
BIO 112	R	Introductory Biology	I		I			I
BIO 209	R	Methods in Biotechnology	I			I		
BIO 372	R	Introduction to Biological Research	D	D		D		
PHP 100	R	Prehealth Seminar				I	I	
BIO 312	E	Ecology	D	D	D			
BIO 456	R	Biomedical Ethics		D	D	M	D	D
BIO 451	R	Biology Seminar	M	M	D	D	M	
BIO 499	R	Research/Senior Paper	M	M	D	M	D	
BIO 310	R	Microbiology	M	D			D	D
BIO 311	E	Medical Genetics		D			D	D
BIO 411	E	Molecular Cell Biology		D			D	D
BIO 410	E	Medical Parasitology		D			D	D
BIO 421	E	General and Comparative Physiology		D				D
BIO 431	E	Developmental Biology		D			D	D
BIO 457	E	Principles of Immunology		M	D		D	D
MAT 232	E	Elementary statistics	I					
CHE 459	R	Biochemistry					D	D
CHE 111	R	General Chemistry						I
CHE 112	R	General Chemistry						I
CHE 211	R	Organic Chemistry						I
CHE 212	R	Organic Chemistry						I
PSY 301	R	Developmental Psychology						D
PSY 305	R	Physiological Psychology						D
PSY 338	R	Psychology of Abnormal Behavior						D