

# BIOLOGY: Pre-Professional Studies – Pre-Health 1

Pre-Dent, Pre-Vet, Pre-PA, Pre-Opt

## MILLIKIN UNIVERSITY

### [B.S Degree - Biology: Pre-Professional, Pre-Health 1] - 8 Semester Plan

Semester #1	Term:	Hours	Spg/Fall/Evry	Semester #2	Term:	Hours	Spg/Fall/Evry
BI 105/155: Ecology and Evolution & Lab		4		BI 205 Cell Biology & Lab		4	
CH 121/151: Gen Chem & Intro Chem Lab I		4		CH 122: Gen Chem II (or CH 232 Analytical Chem)		3	
CO 200: Public Speaking		3		CH 152: Introductory Chem Lab II		1	
IN 140: University Seminar		3		MA 115 Trigonometry or MA140: Calculus I		3 or 4	
EN 181: University Writing		3		_____ : Creative Arts		3	
Semester Total		17		Semester Total		15	
<b>Cumulative Total</b>		<b>17</b>		<b>Cumulative Total</b>		<b>32</b>	
Semester #3	Term:	Hours	Spg/Fall/Evry	Semester #4	Term:	Hours	Spg/Fall/Evry
BI 200: Genetics with Lab		4		BI ____ : Biology Content Category		4	
CH 301/251: Organic Chemistry & Intermed Chem Lab I		4		CH 302/252: Organic Chem II & Intermed Chem Lab II		4	
US Cultural Studies		3		US Structural Studies		3	
EN 281: Writing in the Disciplines		3		_____ : Elective (or 3 credits)		4	
PS 130: Introduction to Psychology (Recommended)		3					
Semester Total		17		Semester Total		15	
<b>Cumulative Total</b>		<b>49</b>		<b>Cumulative Total</b>		<b>64</b>	
Semester #5	Term:	Hours	Spg/Fall/Evry	Semester #6	Term:	Hours	Spg/Fall/Evry
BI ____ : Biology Content Category		4		BI ____ : Biology Content Category		4	
CH 331: Biochemistry		3		BI 240: Analysis of Biological Data (Not Required)		3	
International Cultures & Structures		3		International Cultures & Structures		3	
Global Studies		3		PY 112/172: College PY II & Physics Lab II		4	
PY 111/171: College PY I & Physics Lab I		4		PS 240: Lifespan Development (Recommended)		3	
Semester Total		17		Semester Total		17	
<b>Cumulative Total</b>		<b>81</b>		<b>Cumulative Total</b>		<b>98</b>	
Semester #7	Term:	Hours	Spg/Fall/Evry	Semester #8	Term:	Hours	Spg/Fall/Evry
BI ____ : Biology Content Category		4		BI 482: Senior Seminar		1	
BI 391: Research		1		BI 414 OR PH 217 OR SP 310		3	
EN ____ : Literature		3		HS ____ : Historical Studies		4	
_____ : Elective		4		_____ : Elective		3	
PS 310: Principles of Psychopathology (Recommended)		3		_____ : Elective		3	
Semester Total		15		Semester Total		14	
<b>Cumulative Total</b>		<b>113</b>		<b>Cumulative Total</b>		<b>127</b>	

## Major Requirements:

Core (12 Credits)	<ul style="list-style-type: none"> <li>• BI105/155 Ecology &amp; Evolution</li> <li>• BI205 Cell Biology</li> <li>• BI200 Genetics</li> </ul>
Research (1 credit)	<ul style="list-style-type: none"> <li>• BI391 or 392 Research</li> </ul>
Senior Seminar (1 credit)	<ul style="list-style-type: none"> <li>• BI481 or 482 Senior Seminar</li> </ul>
Upper-level Content Courses (15-16 credits) <i>Students must select at least 1 from each category</i>	<ul style="list-style-type: none"> <li>• Ecology Content</li> <li>• Cell/Molec Bio Content</li> <li>• Systems Content</li> <li>• + 1 additional content</li> </ul>
Mathematics (6-10 credits)	<ul style="list-style-type: none"> <li>• MA115 Trigonometry or MA140 Calculus</li> </ul>
Chemistry (19 credits)	<ul style="list-style-type: none"> <li>• CH121/151 Gen Chem 1</li> <li>• CH122/152 Gen Chem 2</li> <li>• CH301/251 Organic 1</li> <li>• CH302/252 Organic 2</li> <li>• CH331 Biochemistry</li> </ul>
Physics (8 credits)	<ul style="list-style-type: none"> <li>• PY111/171 College Physics I <b>OR</b> PY151/171 University Physics 1</li> <li>• PY112/172 College Physics II <b>OR</b> PY152/172 University Physics 2</li> </ul>
Required Supporting Coursework <i>Must select at least 1 course</i>	<ul style="list-style-type: none"> <li>• BI414 Human Side of Medicine</li> <li>• PH217 Bioethics</li> <li>• SP310 Spanish for Health Professions</li> </ul>

**Content Courses:** *Students must select at least 1 from each category, for a total of 4. Must earn a C- or better*

Ecology	Cell/Molecular	Systems
BI 314 Ecology	BI 302 Histology	BI 301 Comparative Anatomy
BI 320 Field Ecology	BI 304 Developmental Biology	BI 303 Entomology
BI 323 Animal Behavior	BI 312 Immunology	BI 306 Comparative Animal Physiology
BI 335 Physiological Ecology	BI 330 Microbiology#‡	BI 322 Neurobiology
BI 340 Conservation Biology	BI 407 Molecular Genetics	BI 325 Vertebrate Biology
BI 380 Ecological Journeys		BI 326 Plant Biology
BI 404 Evolution		BI 206 & 207 Human Anatomy & Physiology I & II # <i>(must take both to count as one Content Course)</i>

## General Education Requirements:

University Studies Courses (37-39 credits)	<ul style="list-style-type: none"> <li>• IN140 University Seminar</li> <li>• EN181 University Writing</li> <li>• EN281 Writing in the Disciplines</li> <li>• US Cultural Studies</li> <li>• US Structural Studies</li> <li>• Global Studies</li> <li>• International Cultures &amp; Structures <i>(must complete 2)</i></li> <li>• Creative Arts</li> <li>• Natural Science with a Lab Experience <i>(met through the major)</i></li> <li>• Public Speaking (CO 200)</li> <li>• Quantitative Reasoning <i>(met through math course for the major)</i></li> </ul>
College of Arts & Sciences Distribution (6 credits)	<ul style="list-style-type: none"> <li>• Literature course</li> <li>• History course</li> </ul>

*Recommended Courses, based on career path:*

Physician Assistant	<ul style="list-style-type: none"> <li>• MA115 Trigonometry</li> <li>• PY111/171 and PY112/172 College Physics I &amp; II with Labs</li> <li>• PS130 Introduction to Psychology</li> <li>• PS240 Lifespan Development</li> <li>• PS310 Principles of Psychopathology</li> </ul>
Dental School or Veterinary School	<ul style="list-style-type: none"> <li>• MA140 Calculus I</li> <li>• PY111/171 and PY112/172 College Physics I &amp; II with Labs</li> </ul>

#required content course for many PA programs

‡ Required course for some veterinary schools