## Bachelor of Science 2024-25 Biomedical Sciences PreDental

## **Major Code BI12**

	major codo	
CIP Code: 20		r Hrs
General Educ	ation CORE 42 Requirements 42*	32
Area 1A	Social & Behavioral Sciences	6
Area 1B	Civics Engagement	3
Area 2A	Written Communication	6
Area 2B	Oral Communication	3
Area 3A	Natural Science Non-Lab (BIO 110 or CHEM 151)	
Area 3B	Natural science With Lab (BIO 110 or CHEM 151 orPHYS 160)	
Area 4	Mathematics (MATH 140 or 150)	
Area 5A	Humanities	6
Area 5B	Fine Arts	3
Area 5C	Global Competencies	3
Area 5D	Health and Wellness	2
UE 100	University Experience**	1
Required Cou	rses - Biomedical Sciences Core	70
BIO 110	Principles of Biology I	4
BIO 111	Principles of Biology II Anatomy OR BIO 331 Comparative Vertebrate Anatomy	4 5
BIO 201 Human A	Anatomy OR BIO 331 Comparative Vertebrate Anatomy	5
BIO 210	Molecular Cell Biology	4
BIO 231	General and Medical Microbiology	5
BIO 301	Human Physiology	4
BIO 305	Genetics	4
BIO 389	Fund. Of Experimental Design & Statistics	3
OR		
BIO 390	Research and Statistical Methods (3)	
BIO 400	Biology Capstone	1 5
MATH 140 Ale	MATH 140 Alegbra & Trig OR MATH 150 Calculus w/Analytic Geom	
CHEM 151	General Chemistry I	5
CHEM 152	General Chemistry II	5
CHEM 301	Organic Chemistry I	5
CHEM 302	Organic Chemistry II	5
CHEM 350	Biochemistry I	3
PHYS 160	Elementary College Physics I With Lab	4
PHYS 162	Elementary College Physics II	4
BIO	<b>Electives</b> see below for options (200 level or above)	11
See list for applicable courses		
Electives		6
Total Hours	Must include at 39 upper division (300-400) hrs	120

<sup>\*</sup>Required courses in Biology, Chemistry/Physics and Math satisfy Gen Ed Core 42 Areas 3A,3B,4 (10 hours)

<sup>\*\*</sup>Degree Requirement H (UE 100), may also be met by HNRS 101 (2 credit hours).

<sup>@</sup> MATH 130 plus MATH 135 equals MATH 140

#### **Biomedical Sciences PreMedical/PA**

Major Code BI13 Cr Hrs

	major codo	
CIP Code: 26		Hrs
	ation CORE 42 Requirements 42*	32
Area 1A	Social & Behavioral Sciences	6
Area 1B	Civics Engagement	3
Area 2A	Written Communication	6
Area 2B	Oral Communication	3
Area 3A	Natural Science Non-Lab (BIO 110 or CHEM 151)	
Area 3B	Natural science With Lab (BIO 110 or CHEM 151 orPHYS 160)	)
Area 4	Mathematics (MATH 140 or 150)	
Area 5A	Humanities	6
Area 5B	Fine Arts	3
Area 5C	Global Competencies	3
Area 5D	Health and Wellness	2
UE 100	University Experience**	1
	rses - Biomedical Sciences Core 7	0-71
BIO 110	Principles of Biology I	4
BIO 111	Principles of Biology II  natomy OR BIO 331 Comparative Vertebrate Anatomy	4
	Anatomy OR BIO 331 Comparative Vertebrate Anatomy	5
BIO 210	Molecular Cell Biology	4
BIO 231	General and Medical Microbiology	5
BIO 301	Human Physiology	4
BIO 305	Genetics	4
BIO 389	Fund. Of Experimental Design & Statistics	3
OR		
BIO 390	Research and Statistical Methods (3)	
BIO 400	Biology Capstone	1
MATH 130/135	5 Alegbra & Trig OR MATH 150 Calculus w/Analytic Ge	5-6
CHEM 151	General Chemistry I	5
CHEM 152	General Chemistry II	5
CHEM 301	Organic Chemistry I	5
CHEM 302	Organic Chemistry II	5
CHEM 350	Biochemistry I	3
PHYS 160	Elementary College Physics I With Lab	4
PHYS 162	Elementary College Physics II	4
BIO	Electives see below for options (200 level or above)	11
See list for applicable courses		
Electives		5-6
Total Hours	Must include at 39 upper division (300-400) hrs	120
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<sup>\*</sup>Required courses in Biology, Chemistry/Physics and Math satisfy Gen Ed Core 42 Areas 3A,3B,4 (10 hours)

<sup>\*\*</sup>Degree Requirement H (UE 100), may also be met by HNRS 101 (2 credit hours).

<sup>@</sup> MATH 130 plus MATH 135 equals MATH 140

### **Biomedical Sciences PreOptometry**

## Major Code BI14 Cr Hrs

CIP Code: 260102         Cr Hrs           General Education CORE 42 Requirements 42*         32           Area 1A         Social & Behavioral Sciences         6           Area 1B         Civics Engagement         3           Area 2A         Written Communication         6           Area 2B         Oral Communication         3           Area 3B         Natural Science Non-Lab (BIO 110 or CHEM 151)           Area 3B         Natural science With Lab (BIO 110 or CHEM 151 or PHYS 160)           Area 4A         Mathematics (MATH 140 or 150)           Area 5A         Humanities         6           Area 5B         Fine Arts         3           Area 5D         Health and Wellness         2           UE 100         University Experience**         1           Required Courses - Biomedical Sciences Core         70-71           BIO 110         Principles of Biology I         4           BIO 211         Principles of Biology II         4           BIO 221         Molecular Cell Biology         4           BIO 231         General and Medical Microbiology         5           BIO 305         Genetics         4           BIO 389         Fund. Of Experimental Design & Statistics         3 <tr< th=""><th></th><th></th><th></th></tr<>			
Area 1A         Social & Behavioral Sciences         6           Area 1B         Civics Engagement         3           Area 2A         Written Communication         6           Area 2B         Oral Communication         3           Area 3A         Natural Science Non-Lab (BIO 110 or CHEM 151)           Area 3B         Natural science With Lab (BIO 110 or CHEM 151 orPHYS 160)           Area 4         Mathematics (MATH 140 or 150)           Area 5A         Humanities         6           Area 5B         Fine Arts         3           Area 5C         Global Competencies         3           Area 5D         Health and Wellness         2           UE 100         University Experience**         1           Required Courses - Biomedical Sciences Core         70-71           BIO 110         Principles of Biology I         4           BIO 211         Principles of Biology II         4           BIO 210         Molecular Cell Biology         4           BIO 231         General and Medical Microbiology         5           BIO 301         Human Physiology         4           BIO 389         Fund. Of Experimental Design & Statistics         3           OR         BIO 389         Fund. Of Experimental D			
Area 1B         Civics Engagement         3           Area 2A         Written Communication         6           Area 2B         Oral Communication         3           Area 3A         Natural Science Non-Lab (BIO 110 or CHEM 151)           Area 3B         Natural Science With Lab (BIO 110 or CHEM 151 orPHYS 160)           Area 4         Mathematics (MATH 140 or 150)           Area 5A         Humanities         6           Area 5B         Fine Arts         3           Area 5C         Global Competencies         3           Area 5D         Health and Wellness         2           UE 100         University Experience**         1           Required Courses - Biomedical Sciences Core         70-71           BIO 110         Principles of Biology I         4           BIO 110         Principles of Biology II         4           BIO 210         Molecular Cell Biology         4           BIO 231         General and Medical Microbiology         5           BIO 301         Human Physiology         4           BIO 303         Genetics         4           BIO 390         Research and Statistical Methods (3)           BIO 390         Research and Statistical Methods (3)           BIO 400		<u> </u>	
Area 2A         Written Communication         6           Area 2B         Oral Communication         3           Area 3A         Natural Science Non-Lab (BIO 110 or CHEM 151)           Area 3B         Natural science With Lab (BIO 110 or CHEM 151 orPHYS 160)           Area 4         Mathematics (MATH 140 or 150)           Area 5A         Humanities         6           Area 5B         Fine Arts         3           Area 5C         Global Competencies         3           Area 5D         Health and Wellness         2           UE 100         University Experience**         1           Required Courses - Biomedical Sciences Core         70-71           BIO 110         Principles of Biology I         4           BIO 211         Principles of Biology II         4           BIO 210         Molecular Cell Biology         4           BIO 231         General and Medical Microbiology         5           BIO 301         Human Physiology         4           BIO 305         Genetics         4           BIO 390         Research and Statistical Methods (3)           BIO 390         Research and Statistical Methods (3)           BIO 400         Biology Capstone         1           MATH 130/135 <td></td> <td></td> <td></td>			
Area 2B         Oral Communication         3           Area 3A         Natural Science Non-Lab (BIO 110 or CHEM 151)           Area 3B         Natural science With Lab (BIO 110 or CHEM 151 orPHYS 160)           Area 4         Mathematics (MATH 140 or 150)           Area 5A         Humanities         6           Area 5B         Fine Arts         3           Area 5C         Global Competencies         3           Area 5D         Health and Wellness         2           UE 100         University Experience**         1           Required Courses - Biomedical Sciences Core         70-71           BIO 110         Principles of Biology I         4           BIO 211         Principles of Biology II         4           BIO 210         Molecular Cell Biology         4           BIO 221         Molecular Cell Biology         4           BIO 321         General and Medical Microbiology         5           BIO 305         Genetics         4           BIO 307         Research and Statistical Methods (3)         8           BIO 390         Research and Statistical Methods (3)         8           BIO 400         Biology Capstone         1           MATH 130/135 Alegbra & Trig OR MATH 150 Calculus w/Analytic General Chemi	Area 1B		
Area 3A         Natural Science Non-Lab (BIO 110 or CHEM 151)           Area 3B         Natural science With Lab (BIO 110 or CHEM 151 orPHYS 160)           Area 4         Mathematics (MATH 140 or 150)           Area 5A         Humanities         6           Area 5B         Fine Arts         3           Area 5C         Global Competencies         3           Area 5D         Health and Wellness         2           UE 100         University Experience**         1           Required Courses - Biomedical Sciences Core         70-71           BIO 110         Principles of Biology I         4           BIO 211         Principles of Biology II         4           BIO 210         Molecular Cell Biology         4           BIO 221         Molecular Cell Biology         4           BIO 331         General and Medical Microbiology         5           BIO 301         Human Physiology         4           BIO 305         General and Statistical Methods (3)         8           BIO 390         Research and Statistical Methods (3)         8           BIO 390         Research and Statistical Methods (3)         8           BIO 400         Biology Capstone         1           MATH 130/135         Alegha & Trig OR M			
Area 3B         Natural science With Lab (BIO 110 or CHEM 151 orPHYS 160)           Area 4         Mathematics (MATH 140 or 150)           Area 5A         Humanities         6           Area 5B         Fine Arts         3           Area 5C         Global Competencies         3           Area 5D         Health and Wellness         2           UE 100         University Experience**         1           Required Courses - Biomedical Sciences Core         70-71           BIO 110         Principles of Biology I         4           BIO 111         Principles of Biology II         4           BIO 201 Human Anatomy OR BIO 331 Comparative Vertebrate Anatomy         5           BIO 210         Molecular Cell Biology         4           BIO 231         General and Medical Microbiology         5           BIO 301         Human Physiology         4           BIO 305         Genetics         4           BIO 309         Research and Statistical Methods (3)         8           BIO 390         Research and Statistical Methods (3)         8           BIO 400         Biology Capstone         1           MATH 130/135 Alegbra & Trig OR MATH 150 Calculus w/Analytic Getal         5-6           CHEM 151         General Chemistry	Area 2B		3
Area 4         Mathematics (MATH 140 or 150)           Area 5A         Humanities         6           Area 5B         Fine Arts         3           Area 5C         Global Competencies         3           Area 5D         Health and Wellness         2           UE 100         University Experience**         1           Required Courses - Biomedical Sciences Core         70-71           BIO 110         Principles of Biology I         4           BIO 111         Principles of Biology II         4           BIO 201 Human Anatomy OR BIO 331 Comparative Vertebrate Anatomy         5           BIO 210         Molecular Cell Biology         4           BIO 231         General and Medical Microbiology         5           BIO 301         Human Physiology         4           BIO 305         Genetics         4           BIO 308         Fund. Of Experimental Design & Statistics         3           OR         3           BIO 390         Research and Statistical Methods (3)           BIO 390         Research and Statistical Methods (3)           BIO 400         Biology Capstone         1           MATH 130/135 Alegbra & Trig OR MATH 150 Calculus w/Analytic Ge 5-6         5-6           CHEM 151	Area 3A		
Area 5A Humanities 6 Area 5B Fine Arts 3 Area 5C Global Competencies 3 Area 5D Health and Wellness 2 UE 100 University Experience** 1 Required Courses - Biomedical Sciences Core 70-71 BIO 110 Principles of Biology I 4 BIO 111 Principles of Biology II 4 BIO 201 Human Anatomy OR BIO 331 Comparative Vertebrate Anatomy 5 BIO 210 Molecular Cell Biology 4 BIO 231 General and Medical Microbiology 5 BIO 301 Human Physiology 4 BIO 305 Genetics 4 BIO 389 Fund. Of Experimental Design & Statistics 3 OR 5 BIO 390 Research and Statistical Methods (3) BIO 400 Biology Capstone 1 MATH 130/135 Alegbra & Trig OR MATH 150 Calculus w/Analytic G 5-6 CHEM 151 General Chemistry I 5 CHEM 301 Organic Chemistry I 5 CHEM 301 Organic Chemistry I 5 CHEM 302 Organic Chemistry I 5 CHEM 303 Biochemistry I 5 CHEM 350 Biochemistry I 5 CHEM 350 Biochemistry I 5 CHEM 350 Elementary College Physics I With Lab 4 PHYS 162 Elementary College Physics I With Lab 4 PHYS 162 Elementary College Physics II 4 BIO Electives see below for options (200 level or above) 11 See list for applicable courses Electives 5-6 Total Hours Must include at 39 upper division (300-400) hrs 120	Area 3B	Natural science With Lab (BIO 110 or CHEM 151 or PHYS 160)	)
Area 5B         Fine Arts         3           Area 5C         Global Competencies         3           Area 5D         Health and Wellness         2           UE 100         University Experience**         1           Required Courses - Biomedical Sciences Core         70-71           BIO 110         Principles of Biology II         4           BIO 111         Principles of Biology II         4           BIO 201 Human Anatomy OR BIO 331 Comparative Vertebrate Anatomy         5           BIO 210         Molecular Cell Biology         4           BIO 231         General and Medical Microbiology         5           BIO 301         Human Physiology         4           BIO 305         Genetics         4           BIO 389         Fund. Of Experimental Design & Statistics         3           OR         3           BIO 390         Research and Statistical Methods (3)           BIO 400         Biology Capstone         1           MATH 130/135 Alegbra & Trig OR MATH 150 Calculus w/Analytic Ge 5-6         5-6           CHEM 151         General Chemistry I         5           CHEM 301         Organic Chemistry I         5           CHEM 302         Organic Chemistry I         5	Area 4	Mathematics (MATH 140 or 150)	
Area 5C Global Competencies 3 Area 5D Health and Wellness 2 UE 100 University Experience** 1 Required Courses - Biomedical Sciences Core 70-71 BIO 110 Principles of Biology I 4 BIO 111 Principles of Biology II 4 BIO 201 Human Anatomy OR BIO 331 Comparative Vertebrate Anatomy 5 BIO 210 Molecular Cell Biology 4 BIO 231 General and Medical Microbiology 5 BIO 301 Human Physiology 4 BIO 305 Genetics 4 BIO 309 Fund. Of Experimental Design & Statistics 3 OR 8 BIO 390 Research and Statistical Methods (3) BIO 400 Biology Capstone 1 MATH 130/135 Alegbra & Trig OR MATH 150 Calculus w/Analytic G 5-6 CHEM 151 General Chemistry I 5 CHEM 301 Organic Chemistry II 5 CHEM 302 Organic Chemistry II 5 CHEM 305 Biochemistry I 5 CHEM 306 Elementary College Physics I With Lab 4 PHYS 160 Elementary College Physics I With Lab 4 PHYS 162 Elementary College Physics I With Lab 4 PHYS 162 Elementary College Physics I With Lab 4 PHYS 162 Elementary College Physics I With Lab 4 PHYS 162 Elementary College Physics I With Lab 4 PHYS 162 Elementary College Physics I With Lab 4 PHYS 162 Elementary College Physics I With Lab 4 PHYS 162 Elementary College Physics I With Lab 4 PHYS 162 Elementary College Physics I With Lab 4 PHYS 162 Elementary College Physics I With Lab 4 PHYS 162 Elementary College Physics I With Lab 4 PHYS 162 Elementary College Physics I With Lab 4 PHYS 162 Elementary College Physics I With Lab 4 PHYS 162 Elementary College Physics I With Lab 4 PHYS 163 Electives see below for options (200 level or above) 11 See list for applicable courses 5-6 Total Hours Must include at 39 upper division (300-400) hrs 120	Area 5A	Humanities	6
Area 5D Health and Wellness 2  UE 100 University Experience** 1  Required Courses - Biomedical Sciences Core 70-71  BIO 110 Principles of Biology I 4  BIO 111 Principles of Biology II 4  BIO 201 Human Anatomy OR BIO 331 Comparative Vertebrate Anatomy 5  BIO 210 Molecular Cell Biology 4  BIO 231 General and Medical Microbiology 5  BIO 301 Human Physiology 4  BIO 305 Genetics 4  BIO 389 Fund. Of Experimental Design & Statistics 3  OR 8  BIO 390 Research and Statistical Methods (3)  BIO 400 Biology Capstone 1  MATH 130/135 Alegbra & Trig OR MATH 150 Calculus w/Analytic G 5-6  CHEM 151 General Chemistry I 5  CHEM 301 Organic Chemistry II 5  CHEM 302 Organic Chemistry II 5  CHEM 300 Biochemistry I 5  CHEM 350 Biochemistry I 5  CHEM 350 Biochemistry I 5  CHEM 350 Biochemistry I 3  PHYS 160 Elementary College Physics I With Lab 4  PHYS 162 Elementary College Physics I With Lab 4  BIO Electives see below for options (200 level or above) 11  See list for applicable courses  Electives 5-6  Total Hours Must include at 39 upper division (300-400) hrs 120	Area 5B	Fine Arts	
UE 100University Experience**1Required Courses - Biomedical Sciences Core70-71BIO 110Principles of Biology I4BIO 111Principles of Biology II4BIO 201 Human Anatomy OR BIO 331 Comparative Vertebrate Anatomy5BIO 210Molecular Cell Biology4BIO 231General and Medical Microbiology5BIO 301Human Physiology4BIO 305Genetics4BIO 389Fund. Of Experimental Design & Statistics3OR30Research and Statistical Methods (3)BIO 400Biology Capstone1MATH 130/135 Alegbra & Trig OR MATH 150 Calculus w/Analytic G5-6CHEM 151General Chemistry I5CHEM 152General Chemistry II5CHEM 301Organic Chemistry II5CHEM 302Organic Chemistry II5CHEM 350Biochemistry I5CHEM 350Biochemistry I5CHEM 360Elementary College Physics I With Lab4PHYS 162Elementary College Physics II4BIOElectives see below for options (200 level or above)11See list for applicable courses5-6Total HoursMust include at 39 upper division (300-400) hrs120	Area 5C	Global Competencies	
Required Courses - Biomedical Sciences Core70-71BIO 110Principles of Biology I4BIO 111Principles of Biology II4BIO 201 Human Anatomy OR BIO 331 Comparative Vertebrate Anatomy5BIO 210Molecular Cell Biology4BIO 231General and Medical Microbiology5BIO 301Human Physiology4BIO 305Genetics4BIO 389Fund. Of Experimental Design & Statistics3OR30Research and Statistical Methods (3)BIO 390Research and Statistical Methods (3)1BIO 400Biology Capstone1MATH 130/135 Alegbra & Trig OR MATH 150 Calculus w/Analytic G5-6CHEM 151General Chemistry I5CHEM 152General Chemistry II5CHEM 301Organic Chemistry II5CHEM 302Organic Chemistry II5CHEM 350Biochemistry I3PHYS 160Elementary College Physics I With Lab4PHYS 162Elementary College Physics II4BIOElectives see below for options (200 level or above)11See list for applicable courses5-6Total HoursMust include at 39 upper division (300-400) hrs120	Area 5D	Health and Wellness	2
BIO 110         Principles of Biology I         4           BIO 111         Principles of Biology II         4           BIO 201 Human Anatomy OR BIO 331 Comparative Vertebrate Anatomy         5           BIO 210         Molecular Cell Biology         4           BIO 231         General and Medical Microbiology         5           BIO 301         Human Physiology         4           BIO 305         Genetics         4           BIO 389         Fund. Of Experimental Design & Statistics         3           OR         3           BIO 390         Research and Statistical Methods (3)           BIO 400         Biology Capstone         1           MATH 130/135 Alegbra & Trig OR MATH 150 Calculus w/Analytic Getection         5-6           CHEM 151         General Chemistry I         5           CHEM 152         General Chemistry II         5           CHEM 301         Organic Chemistry I         5           CHEM 350         Biochemistry I         5           CHEM 350         Biochemistry College Physics I With Lab         4           PHYS 162         Elementary College Physics II         4           BIO         Electives see below for options (200 level or above)         11           See list for applicable cours	UE 100	University Experience**	1
BIO 111	Required Cou	rses - Biomedical Sciences Core 7	0-71
BIO 210         Molecular Cell Biology         4           BIO 231         General and Medical Microbiology         5           BIO 301         Human Physiology         4           BIO 305         Genetics         4           BIO 389         Fund. Of Experimental Design & Statistics         3           OR         BIO 390         Research and Statistical Methods (3)           BIO 400         Biology Capstone         1           MATH 130/135         Alegbra & Trig OR MATH 150 Calculus w/Analytic G         5-6           CHEM 151         General Chemistry I         5           CHEM 152         General Chemistry II         5           CHEM 301         Organic Chemistry I         5           CHEM 302         Organic Chemistry II         5           CHEM 350         Biochemistry I         3           PHYS 160         Elementary College Physics I With Lab         4           PHYS 162         Elementary College Physics II         4           BIO         Electives see below for options (200 level or above)         11           See list for applicable courses         5-6           Total Hours         Must include at 39 upper division (300-400) hrs         120			4
BIO 210         Molecular Cell Biology         4           BIO 231         General and Medical Microbiology         5           BIO 301         Human Physiology         4           BIO 305         Genetics         4           BIO 389         Fund. Of Experimental Design & Statistics         3           OR         BIO 390         Research and Statistical Methods (3)           BIO 400         Biology Capstone         1           MATH 130/135         Alegbra & Trig OR MATH 150 Calculus w/Analytic G         5-6           CHEM 151         General Chemistry I         5           CHEM 152         General Chemistry II         5           CHEM 301         Organic Chemistry I         5           CHEM 302         Organic Chemistry II         5           CHEM 350         Biochemistry I         3           PHYS 160         Elementary College Physics I With Lab         4           PHYS 162         Elementary College Physics II         4           BIO         Electives see below for options (200 level or above)         11           See list for applicable courses         5-6           Total Hours         Must include at 39 upper division (300-400) hrs         120	BIO 111	Principles of Biology II	
BIO 210         Molecular Cell Biology         4           BIO 231         General and Medical Microbiology         5           BIO 301         Human Physiology         4           BIO 305         Genetics         4           BIO 389         Fund. Of Experimental Design & Statistics         3           OR         BIO 390         Research and Statistical Methods (3)           BIO 400         Biology Capstone         1           MATH 130/135         Alegbra & Trig OR MATH 150 Calculus w/Analytic G         5-6           CHEM 151         General Chemistry I         5           CHEM 152         General Chemistry II         5           CHEM 301         Organic Chemistry I         5           CHEM 302         Organic Chemistry II         5           CHEM 350         Biochemistry I         3           PHYS 160         Elementary College Physics I With Lab         4           PHYS 162         Elementary College Physics II         4           BIO         Electives see below for options (200 level or above)         11           See list for applicable courses         5-6           Total Hours         Must include at 39 upper division (300-400) hrs         120	BIO 201 Human A	Anatomy OR BIO 331 Comparative Vertebrate Anatomy	5
BIO 301         Human Physiology         4           BIO 305         Genetics         4           BIO 389         Fund. Of Experimental Design & Statistics         3           OR         BIO 390         Research and Statistical Methods (3)           BIO 400         Biology Capstone         1           MATH 130/135 Alegbra & Trig OR MATH 150 Calculus w/Analytic Ge 5-6         5-6           CHEM 151         General Chemistry I         5           CHEM 301         Organic Chemistry II         5           CHEM 302         Organic Chemistry II         5           CHEM 350         Biochemistry I         3           PHYS 160         Elementary College Physics I With Lab         4           PHYS 162         Elementary College Physics II         4           BIO         Electives see below for options (200 level or above)         11           See list for applicable courses         5-6           Electives         5-6           Total Hours         Must include at 39 upper division (300-400) hrs         120		Molecular Cell Biology	4
BIO 301         Human Physiology         4           BIO 305         Genetics         4           BIO 389         Fund. Of Experimental Design & Statistics         3           OR         BIO 390         Research and Statistical Methods (3)           BIO 400         Biology Capstone         1           MATH 130/135 Alegbra & Trig OR MATH 150 Calculus w/Analytic Ge 5-6         5-6           CHEM 151         General Chemistry I         5           CHEM 301         Organic Chemistry II         5           CHEM 302         Organic Chemistry II         5           CHEM 350         Biochemistry I         3           PHYS 160         Elementary College Physics I With Lab         4           PHYS 162         Elementary College Physics II         4           BIO         Electives see below for options (200 level or above)         11           See list for applicable courses         5-6           Electives         5-6           Total Hours         Must include at 39 upper division (300-400) hrs         120	BIO 231	General and Medical Microbiology	5
BIO 389 Fund. Of Experimental Design & Statistics 3 OR BIO 390 Research and Statistical Methods (3) BIO 400 Biology Capstone 1 MATH 130/135 Alegbra & Trig OR MATH 150 Calculus w/Analytic Ge 5-6 CHEM 151 General Chemistry I 5 CHEM 152 General Chemistry II 5 CHEM 301 Organic Chemistry I 5 CHEM 302 Organic Chemistry II 5 CHEM 350 Biochemistry I 5 CHEM 350 Biochemistry I 3 PHYS 160 Elementary College Physics I With Lab 4 PHYS 162 Elementary College Physics II 4  BIO Electives see below for options (200 level or above) 11 See list for applicable courses Electives 5-6 Total Hours Must include at 39 upper division (300-400) hrs 120	BIO 301		4
BIO 390 Research and Statistical Methods (3)  BIO 400 Biology Capstone 1  MATH 130/135 Alegbra & Trig OR MATH 150 Calculus w/Analytic Ge 5-6  CHEM 151 General Chemistry I 5  CHEM 152 General Chemistry II 5  CHEM 301 Organic Chemistry I 5  CHEM 302 Organic Chemistry II 5  CHEM 350 Biochemistry I 3  PHYS 160 Elementary College Physics I With Lab 4  PHYS 162 Elementary College Physics II 4  BIO Electives see below for options (200 level or above) 11  See list for applicable courses  Electives 5-6  Total Hours Must include at 39 upper division (300-400) hrs 120	BIO 305	Genetics	4
BIO 390 Research and Statistical Methods (3) BIO 400 Biology Capstone 1  MATH 130/135 Alegbra & Trig OR MATH 150 Calculus w/Analytic Ge 5-6 CHEM 151 General Chemistry I 5 CHEM 152 General Chemistry II 5 CHEM 301 Organic Chemistry I 5 CHEM 302 Organic Chemistry II 5 CHEM 350 Biochemistry I 3 PHYS 160 Elementary College Physics I With Lab 4 PHYS 162 Elementary College Physics II 4  BIO Electives see below for options (200 level or above) 11 See list for applicable courses Electives 5-6 Total Hours Must include at 39 upper division (300-400) hrs 120	BIO 389	Fund. Of Experimental Design & Statistics	3
BIO 400 Biology Capstone 1  MATH 130/135 Alegbra & Trig OR MATH 150 Calculus w/Analytic Ge 5-6  CHEM 151 General Chemistry I 5  CHEM 152 General Chemistry II 5  CHEM 301 Organic Chemistry II 5  CHEM 302 Organic Chemistry II 5  CHEM 350 Biochemistry I 5  CHEM 350 Biochemistry I 3  PHYS 160 Elementary College Physics I With Lab 4  PHYS 162 Elementary College Physics II 4  BIO Electives see below for options (200 level or above) 11  See list for applicable courses  Electives 5-6  Total Hours Must include at 39 upper division (300-400) hrs 120	OR		
MATH 130/135 Alegbra & Trig OR MATH 150 Calculus w/Analytic G 5-6 CHEM 151 General Chemistry I 5 CHEM 152 General Chemistry II 5 CHEM 301 Organic Chemistry I 5 CHEM 302 Organic Chemistry II 5 CHEM 350 Biochemistry I 3 PHYS 160 Elementary College Physics I With Lab 4 PHYS 162 Elementary College Physics II 4  BIO Electives see below for options (200 level or above) 11 See list for applicable courses Electives 5-6 Total Hours Must include at 39 upper division (300-400) hrs 120	BIO 390	Research and Statistical Methods (3)	
CHEM 151 General Chemistry I 5 CHEM 152 General Chemistry II 5 CHEM 301 Organic Chemistry I 5 CHEM 302 Organic Chemistry II 5 CHEM 350 Biochemistry I 3 PHYS 160 Elementary College Physics I With Lab 4 PHYS 162 Elementary College Physics II 4  BIO Electives see below for options (200 level or above) 11 See list for applicable courses Electives 5-6 Total Hours Must include at 39 upper division (300-400) hrs 120	BIO 400	Biology Capstone	1
CHEM 152 General Chemistry II 5 CHEM 301 Organic Chemistry I 5 CHEM 302 Organic Chemistry II 5 CHEM 350 Biochemistry I 3 PHYS 160 Elementary College Physics I With Lab 4 PHYS 162 Elementary College Physics II 4 BIO Electives see below for options (200 level or above) 11 See list for applicable courses Electives 5-6 Total Hours Must include at 39 upper division (300-400) hrs 120	MATH 130/135	5 Alegbra & Trig OR MATH 150 Calculus w/Analytic Ge	5-6
CHEM 301 Organic Chemistry I 5 CHEM 302 Organic Chemistry II 5 CHEM 350 Biochemistry I 3 PHYS 160 Elementary College Physics I With Lab 4 PHYS 162 Elementary College Physics II 4  BIO Electives see below for options (200 level or above) 11 See list for applicable courses Electives 5-6 Total Hours Must include at 39 upper division (300-400) hrs 120	CHEM 151	General Chemistry I	5
CHEM 301 Organic Chemistry I 5 CHEM 302 Organic Chemistry II 5 CHEM 350 Biochemistry I 3 PHYS 160 Elementary College Physics I With Lab 4 PHYS 162 Elementary College Physics II 4  BIO Electives see below for options (200 level or above) 11 See list for applicable courses Electives 5-6 Total Hours Must include at 39 upper division (300-400) hrs 120	CHEM 152	General Chemistry II	5
CHEM 302 Organic Chemistry II 5 CHEM 350 Biochemistry I 3 PHYS 160 Elementary College Physics I With Lab 4 PHYS 162 Elementary College Physics II 4  BIO Electives see below for options (200 level or above) 11 See list for applicable courses Electives 5-6 Total Hours Must include at 39 upper division (300-400) hrs 120	CHEM 301	Organic Chemistry I	5
CHEM 350 Biochemistry I 3  PHYS 160 Elementary College Physics I With Lab 4  PHYS 162 Elementary College Physics II 4  BIO Electives see below for options (200 level or above) 11  See list for applicable courses  Electives 5-6  Total Hours Must include at 39 upper division (300-400) hrs 120	CHEM 302	Organic Chemistry II	5
PHYS 162 Elementary College Physics II 4  BIO Electives see below for options (200 level or above) 11  See list for applicable courses  Electives 5-6  Total Hours Must include at 39 upper division (300-400) hrs 120	CHEM 350		3
PHYS 162 Elementary College Physics II 4  BIO Electives see below for options (200 level or above) 11  See list for applicable courses  Electives 5-6  Total Hours Must include at 39 upper division (300-400) hrs 120	PHYS 160	Elementary College Physics I With Lab	4
See list for applicable courses  Electives 5-6  Total Hours Must include at 39 upper division (300-400) hrs 120	PHYS 162		4
Electives5-6Total HoursMust include at 39 upper division (300-400) hrs120		. , ,	11
Total HoursMust include at 39 upper division (300-400) hrs120		plicable courses	
11 ,			
	Total Hours	. , , , , , , , , , , , , , , , , , , ,	120

<sup>\*</sup>Required courses in Biology, Chemistry/Physics and Math satisfy Gen Ed Core 42 Areas 3A,3B,4 (10 hours)

<sup>\*\*</sup>Degree Requirement H (UE 100), may also be met by HNRS 101 (2 credit hours).

<sup>@</sup> MATH 130 plus MATH 135 equals MATH 140

### **Biomedical Sciences PreOptometry**

# Major Code BI15 Cr Hrs

	major cours	
CIP Code: 20	<b>60102</b> Ci	r Hrs
General Educ	ation CORE 42 Requirements 42*	32
Area 1A	Social & Behavioral Sciences	6
Area 1B	Civics Engagement	3
Area 2A	Written Communication	6
Area 2B	Oral Communication	3
Area 3A	Natural Science Non-Lab (BIO 110 or CHEM 151)	
Area 3B	Natural science With Lab (BIO 110 or CHEM 151 or PHYS 160)	)
Area 4	Mathematics (MATH 140 or 150)	
Area 5A	Humanities	6
Area 5B	Fine Arts	3
Area 5C	Global Competencies	3
Area 5D	Health and Wellness	2
UE 100	University Experience**	1
	rses - Biomedical Sciences Core 7	0-71
BIO 110	Principles of Biology I	4
BIO 111	Principles of Biology II Anatomy OR BIO 331 Comparative Vertebrate Anatomy	4
BIO 201 Human A	Anatomy OR BIO 331 Comparative Vertebrate Anatomy	5
BIO 210	Molecular Cell Biology	4
BIO 231	General and Medical Microbiology	5
BIO 301	Human Physiology	4
BIO 305	Genetics	4
BIO 389	Fund. Of Experimental Design & Statistics	3
OR		
BIO 390	Research and Statistical Methods (3)	
BIO 400	Biology Capstone	1
MATH 130/13	5 Alegbra & Trig OR MATH 150 Calculus w/Analytic G	5-6
CHEM 151	General Chemistry I	5
CHEM 152	General Chemistry II	5
CHEM 301	Organic Chemistry I	5
CHEM 302	Organic Chemistry II	5
CHEM 350	Biochemistry I	3
PHYS 160	Elementary College Physics I With Lab	4
PHYS 162	Elementary College Physics II	4
BIO	<b>Electives</b> see below for options (200 level or above)	11
See list for applicable courses		
Electives		5-6
Total Hours	Must include at 39 upper division (300-400) hrs	120

<sup>\*</sup>Required courses in Biology, Chemistry/Physics and Math satisfy Gen Ed Core 42 Areas 3A,3B,4 (10 hours)

<sup>\*\*</sup>Degree Requirement H (UE 100), may also be met by HNRS 101 (2 credit hours).

<sup>@</sup> MATH 130 plus MATH 135 equals MATH 140

## **Biomedical Sciences PreVeterinary**

# Major Code BI16 Cr Hrs

	inajor cous	
CIP Code: 20	<b>60102</b> C	r Hrs
General Educ	ation CORE 42 Requirements 42*	32
Area 1A	Social & Behavioral Sciences	6
Area 1B	Civics Engagement	3
Area 2A	Written Communication	6
Area 2B	Oral Communication	3
Area 3A	Natural Science Non-Lab (BIO 110 or CHEM 151)	
Area 3B	Natural science With Lab (BIO 110 or CHEM 151 or PHYS 160	)
Area 4	Mathematics (MATH 140 or 150)	
Area 5A	Humanities	6
Area 5B	Fine Arts	3
Area 5C	Global Competencies	3
Area 5D	Health and Wellness	2
UE 100	University Experience**	1
Required Cou	rses - Biomedical Sciences Core 7	0-71
BIO 110	Principles of Biology I	4
BIO 111	Principles of Biology II	4
BIO 201 Human A	Principles of Biology II Anatomy OR BIO 331 Comparative Vertebrate Anatomy	5
BIO 210	Molecular Cell Biology	4
BIO 231	General and Medical Microbiology	5
BIO 301	Human Physiology	4
BIO 305	Genetics	4
BIO 389	Fund. Of Experimental Design & Statistics	3
OR		
BIO 390	Research and Statistical Methods (3)	
BIO 400	Biology Capstone	1
MATH 130/13	5 Alegbra & Trig OR MATH 150 Calculus w/Analytic G	5-6
CHEM 151	General Chemistry I	5
CHEM 152	General Chemistry II	5
CHEM 301	Organic Chemistry I	5
CHEM 302	Organic Chemistry II	5
CHEM 350	Biochemistry I	3
PHYS 160	Elementary College Physics I With Lab	4
PHYS 162	Elementary College Physics II	4
BIO	<b>Electives</b> see below for options (200 level or above)	11
See list for applicable courses		
Electives		5-6
Total Hours	Must include at 39 upper division (300-400) hrs	120
		_

<sup>\*</sup>Required courses in Biology, Chemistry/Physics and Math satisfy Gen Ed Core 42 Areas 3A,3B,4 (10 hours)

<sup>\*\*</sup>Degree Requirement H (UE 100), may also be met by HNRS 101 (2 credit hours).

<sup>@</sup> MATH 130 plus MATH 135 equals MATH 140