

# BIOCHEMISTRY B.S.

## Four Year Plan

**Disclaimer:** This *sample Four Year Plan* is provided as a guide for the recommended sequencing of courses. Vanguard University requires that students complete a minimum of 120 units of required course work as outlined on the Requirements tab in order to receive a Bachelor of Arts, Bachelor of Music, Bachelor of Science, or Bachelor of Science in Nursing degree. It is the student's responsibility to confirm with the department the course rotation before enrolling in courses. If applicable, please note the footnotes at the bottom of the page for additional information related to courses listed in a particular year and term. Questions, contact the Department of Physical Sciences and Mathematics.

**Study Abroad Participation:** Students interested in participating in the university's Study Abroad programs are encouraged to reach out to the Global Education and Outreach Office (studyabroad@vanguard.edu) for more information and collaboration in their academic course planning. Students using Education and Training Benefits through the U.S. Department of Veteran Affairs are encouraged to also reach out to the School Certifying Official (veteranscertifyingofficial@vanguard.edu) for more information regarding how benefits can be applied.

Course	Title	Units
<b>Year 1 Term 1</b>		
CORE-100C	Cornerstone	1
ENGL-120C	Persuasive Writing	3
CHEM-120	General Chemistry I	3
CHEM-120L	General Chemistry I Lab	1
MATH-180C	Calculus I	4
THEO-PLHD	Theology Core Requirement	3
KINE-148C	Lifetime Fitness and Wellness Lecture	3
<b>Units</b>		<b>18</b>
<b>Year 1 Term 2</b>		
CHEM-121	General Chemistry II	3
CHEM-121L	General Chemistry II Lab	1
BIOL-111	Principles of Cell and Molecular Biology	3
BIOL-111L	Principles of Biology Lab, Principles of Cell/ Molecular Biology Lab	1
MATH-181C	Calculus II	4
NT-101C	New Testament Survey	3
<b>Units</b>		<b>15</b>
<b>Year 2 Term 1</b>		
CHEM-252	Analytical Chemistry	3
CHEM-252L	Analytical Chem Techniques	1
PSCI-223C	Mechanics of Solids and Fluids	3
PSCI-223CL	Mechanics of Solids and Fluids Lab	1
CHEM-304	Organic Chemistry I	3
CHEM-304L	Organic Chemistry Techniques I	1

HIST-PLCR1	History Core Req (US Hist Or Democracy)	3
<b>Units</b>		<b>15</b>
<b>Year 2 Term 2</b>		
SOC-PLCR	Social Science Core Curriculum Req'm't	3
PSCI-225	Electricity and Magnetism	3
PSCI-225L	Electricity and Magnetsm Lab	1
OT-201C	Old Testament Survey	3
CHEM-305	Organic Chemistry II	3
CHEM-305L	Organic Chemistry Technqs II	1
CHEM-PLHDRCH	Undergraduate Research	2-4
<b>Units</b>		<b>16-18</b>
<b>Year 3 Term 1</b>		
CHEM-456	Physical Chemistry: Thermodynamics	2
THEO-300C	Developing a Christian World View	3
FINA-PLCR	Fine Arts Core Curriculum Requirement	3
CHEM-440	Instrumental Analysis	2
CHEM-440L	Instrumental Analysis Lab	2
CHEM-PLHD4	STEM Elective	4
<b>Units</b>		<b>16</b>
<b>Year 3 Term 2</b>		
COMM-201C	Speech Composition and Presentation	3
CHEM-PLUD4A	Upper Division STEM Elective (4 units)	4
CHEM-PLHD4	STEM Elective	4
CHEM-457	Physical Chemistry: Kinetics	2
CHEM-456L	Physical Chemistry Technique Lab	1-2
<b>Units</b>		<b>14-15</b>
<b>Year 4 Term 1</b>		
CHEM-430	Biochemistry	3
CHEM-430L	Experimental Tech/Biochemistry	1
HIST-PLCR2	History Core Requirement (World Civ)	3
ENGL-220C	Researched Writing	3
PSYC-103C	Introduction to Psychology	3
<b>Units</b>		<b>13</b>
<b>Year 4 Term 2</b>		
CHEM-499C	Chemistry Capstone Seminar	2
CHEM-435	Advanced Biochemistry	3
CHIS-400C	Christian Heritage	3
ENGL-230C	Literature and the Human Experience	3
CHEM-PLUD4A	Upper Division STEM Elective (4 units)	4
<b>Units</b>		<b>15</b>
<b>Total Units</b>		<b>122-125</b>

