

# FOUR YEAR PLAN | Chemistry with an Education Minor

VISTA :: Chemistry :: Department of Physical Sciences and Applied Mathematics  
 This is a sample 4-year plan for **ODD** years. Students are required to meet with their Academic Advisors each semester.



## YEAR ONE

FALL SEMESTER		
COURSE #	COURSE NAME	UNITS
CHEM 120/L	General Chemistry I <sup>1</sup>	4
MATH 180C	Calculus I <sup>1</sup>	4
ENGL 120C	Persuasive Writing	3
NT 101C	New Testament Survey	3
KINE 146C	Lifetime Fitness and Wellness (Activity)	1
CORE 100C	Cornerstone	1
TOTAL		16

SPRING SEMESTER		
COURSE #	COURSE NAME	UNITS
CHEM 121/L	General Chemistry II	4
FINA	Fine Arts Requirements	3
POLS 155C	American Democracy <sup>2</sup>	3
MATH 181	Calculus II	4
KINE 145C	Lifetime Fitness and Wellness (Lecture)	1
ANTH 102C or SOC 100C	Introduction to Cultural Anthropology or Introduction to Sociology	3
TOTAL		18

## YEAR TWO

FALL SEMESTER		
COURSE #	COURSE NAME	UNITS
CHEM 252/L	Analytical Chemistry <sup>4</sup>	4
CHEM 304/L	Organic Chemistry I	4
EDUC 315	Teaching in Multicultural Setting	3
THEO 101C	Foundations of Christian Life	3
MATH 181C	Calculus II	4
TOTAL		18

SPRING SEMESTER		
COURSE #	COURSE NAME	UNITS
ELECTIVE	Elective in CHEM, ENVR or ENGR	4
CHEM 305/L	Organic Chemistry II	4
ENGL 220C	Researched Writing	3
OT 201C	Old Testament Survey	3
HIST 203C or HIST 204C	World Civilization I or World Civilization II	3
TOTAL		17

## YEAR THREE

FALL SEMESTER		
COURSE #	COURSE NAME	UNITS
CHEM 456	Physical Chemistry: Thermodynamics <sup>4</sup>	2
PSCI 223C/L	Thermodynamics <sup>4</sup>	4
CHEM 430/L	Mechanics and Heat	4
COMM 201C	Biochemistry	3
CHEM 485	Speech Composition Undergraduate Research <sup>3</sup>	2
TOTAL		15

SPRING SEMESTER		
COURSE #	COURSE NAME	UNITS
PSCI 225/L	Electricity, Magnetism and Light	4
CHEM 456L	Physical Chemistry Techniques <sup>4</sup>	1
ENGL 230C	Literature/ Human Experience	3
ANTH 453	Language, Culture and Linguistics <sup>2</sup>	3
THEO 300C	Christian World View	3
CHIS 400C	Christian Heritage	3
TOTAL		17

## YEAR FOUR

FALL SEMESTER		
COURSE #	COURSE NAME	UNITS
EDUC 424	Foundations in Teaching SS	2
EDUC 426	Instructional Design and Pedagogy	4
EDUC 435	Early Supervised Field Work	4
EDUC 444	Language Acquisition	1
EDUC 447	Metacognition and Reading	1
EDUC 452	Literacy in the Content Area	1
EDUC 464	Use of Technology in the Classroom	1
EDUC 442	Cal TPA Cycle 1 BST	0.5
TOTAL		14.5

SPRING SEMESTER		
COURSE #	COURSE NAME	UNITS
MATH 499C	Capstone	2
EDUC 434	Curriculum Unit Planning for SS	2
EDUC 488	Clinical Practice Seminar for SS	2
EDUC 489	Clinical Practice Fieldwork for SS	8
EDUC 443	Cal TPA Cycle 2 AST	0.5
TOTAL		14.5

**NOTES**  
<sup>1</sup> A passing score on the placement exam is required for enrollment.  
<sup>2</sup> POLS 155C and ANTH 453 are Credential program requirements.  
<sup>3</sup> CHEM/ENVR 485 is typically taught in summer. A limited number of fellowships are available. Off-campus internships (CHEM/ENVR 450) as well as Senior Project (CHEM/ENVR 488) are acceptable for degree requirements.  
<sup>4</sup> Course is offered on an alternating even/odd year cycle.



**VISTA PROGRAM: CHEMISTRY 129 units**  
Chemistry Integrated Teaching Credential with an Education Minor

**Core Curriculum**

<input type="checkbox"/> <b>CORE 100C</b> .....	<b>1</b>
Core 100C: Cornerstone	
<input type="checkbox"/> <b>ENGL 120C</b> .....	<b>3</b>
ENGL 120C: Persuasive Writing	
<input type="checkbox"/> <b>KINE 145C/146C</b> .....	<b>2</b>
o KINE 145C: Lifetime Fitness (Lecture)	
o KINE 146C: Lifetime Fitness (Activity)	
<input type="checkbox"/> <b>POLS 155C</b> .....	<b>3</b>
<sup>1</sup> POLS 155C: American Democracy	
<input type="checkbox"/> <b>COMM 201C</b> .....	<b>3</b>
COMM 201C: Speech Composition	
<input type="checkbox"/> <b>ENGL 220C</b> .....	<b>3</b>
ENGL 220C: Researched Writing	
<input type="checkbox"/> <b>ENGL 230C</b> .....	<b>3</b>
ENGL 230C: Literature/Human Exp.	
<input type="checkbox"/> <b>Social Science (Choose 2)</b> .....	<b>6</b>
o ANTH 102C: Intro to Cultural Anthro	
o PSYC 103C: General Psychology	
o SOC 100C: Intro to Sociology	
<input type="checkbox"/> <b>World Civilization (Choose 1)</b>	<b>3</b>
o HIST 203C: World Civilization I	
o HIST 204C: World Civilization II	
<input type="checkbox"/> <b>Fine Arts (Choose 1)</b> .....	<b>3</b>
ART 252C, FINA 215C, MUJZ 355C, MUSC 202C, THEA 102C, THEA 200C, THEA 202C	
<input type="checkbox"/> <b>Bible/Theology</b> .....	<b>15</b>
<input type="checkbox"/> NT 101C: New Testament Survey. 3	
<input type="checkbox"/> Theology (Choose 1)..... 3	
o THEO 101C: Found/Christian Life	
o THEO 103C: Intro to Theology	
<input type="checkbox"/> OT 201C: Old Testament Survey.. 3	
<input type="checkbox"/> THEO 300C: Christian Wrld View 3	
<input type="checkbox"/> CHIS 400C: Christian Heritage .... 3	

Total Core units .....	<b>30</b>
Total Bible/Theology units.....	<b>15</b>
<b>Total Core units .....</b>	<b>45</b>

**VISTA: Chemistry  
LOWER DIVISION**

<input type="checkbox"/> <b>CHEM 120/L</b> .....	<b>4</b>
<sup>+</sup> Chemistry I and Chemistry I Lab	
<input type="checkbox"/> <b>CHEM 121/L</b> .....	<b>4</b>
<sup>+</sup> Chemistry II and Chemistry II Lab	
<input type="checkbox"/> <b>MATH 180C</b> .....	<b>4</b>
Calculus I	
<input type="checkbox"/> <b>MATH 181C</b> .....	<b>4</b>
Calculus II	
<input type="checkbox"/> <b>PSCI 223C/L</b> .....	<b>4</b>
Mechanics and Heat with Lab	
<input type="checkbox"/> <b>PSCI 225/L</b> .....	<b>4</b>
<sup>+</sup> Electric., Magnet., Sound, Light/Lab	
<input type="checkbox"/> <b>CHEM 252/L</b> .....	<b>4</b>
Analytical Chemistry & Lab	

**UPPER DIVISION**

<input type="checkbox"/> <b>CHEM 304/L</b> .....	<b>4</b>
<sup>+</sup> Organic Chemistry I & Techniques I	
<input type="checkbox"/> <b>CHEM 305/L</b> .....	<b>4</b>
Organic Chemistry II & Techniques II	
<input type="checkbox"/> <b>EDUC 315</b> .....	<b>3</b>
Teaching in Multicultural Setting	
<input type="checkbox"/> <b>CHEM 430/L</b> .....	<b>4</b>
<sup>+</sup> Biochemistry and Techniques	
<input type="checkbox"/> <b>ANTH 453</b> .....	<b>3</b>
<sup>1</sup> Language, Culture & Linguistics	
<input type="checkbox"/> <b>CHEM 456/L</b> .....	<b>3</b>
Physical Chem: Therm. & Techniques	
<input type="checkbox"/> <b>Research/Project (Choose 1)</b>	<b>2</b>
o CHEM 450: Internship Program	
o CHEM 485: Undergraduate Research	
o CHEM 488: Biology Senior Project	
<input type="checkbox"/> <b>CHEM 499C</b> .....	<b>2</b>
Capstone Seminar in Chemistry	
<input type="checkbox"/> <b>ELECTIVE</b> .....	<b>4</b>
Specific to CHEM, ENVR OR ENGR	

Lower Division units .....	<b>28</b>
Upper Division units .....	<b>29</b>
<b>Total Chemistry units .....</b>	<b>57</b>

**Single Subject Credential  
FIRST SEMESTER:**

<input type="checkbox"/> <b>EDUC 424</b> .....	<b>2</b>
Foundations in Teaching Single Subject	
<input type="checkbox"/> <b>EDUC 426</b> .....	<b>4</b>
Instructional Design & Subject Specific Pedagogy for Single Subject	
<input type="checkbox"/> <b>EDUC 435</b> .....	<b>4</b>
<sup>2</sup> Early Supervised Field Work	
<input type="checkbox"/> <b>EDUC 444</b> .....	<b>1</b>
Language Acquisition for the Secondary Student	
<input type="checkbox"/> <b>EDUC 447</b> .....	<b>1</b>
Metacognition & Reading Strategies for Student Learning	

<input type="checkbox"/> <b>EDUC 452</b> .....	<b>1</b>
Literacy in the Content Area	
<input type="checkbox"/> <b>EDUC 464</b> .....	<b>1</b>
Use of Technology in the Classroom	
<input type="checkbox"/> <b>EDUC 442</b> .....	<b>0.5</b>
Cal TPA Cycle 1 BST	

**SECOND SEMESTER:**

<input type="checkbox"/> <b>EDUC 434</b> .....	<b>2</b>
Curriculum Unit Planning for SS	
<input type="checkbox"/> <b>EDUC 488</b> .....	<b>2</b>
Clinical Practice Seminar for SS	
<input type="checkbox"/> <b>EDUC 489</b> .....	<b>8</b>
<sup>3</sup> Clinical Practice Fieldwork for SS	
<input type="checkbox"/> <b>EDUC 443</b> .....	<b>0.5</b>
Cal TPA Cycle 2 AST	
<sup>+</sup> Subject Matter Preparation Program (SMPP) Required Courses	
<sup>1</sup> Credential Program Requirement	
<sup>2</sup> BST Semester: 2 full-time days per week (100 hours) at a school site. Lab Fee.	
<sup>3</sup> AST Semester: 5 full-time days per week (500 hours) at a school site. Lab Fee.	

First semester .....	<b>14.5</b>
Second semester .....	<b>12.5</b>
<b>Total Credential units .....</b>	<b>27</b>