BSc in Chemistry and Biological Chemistry (CHEM) - USP

AY2025 - 2026 Intake onwards FYP with Professional Internship

					Numbei	of Academ	ic Units (AU)			
	Year of	Major Requiremen		USP Requirement		Interdisciplinary Collaborative Core				
Programme	Study	Core (C)	Major PE (MPE)	USP Core (USP-C)	USP Broadening Electives (USP-PE)	Common Core (CC)	Professional Series (PS)	Care, Serve and Learn (CSL)	Broadening and Deepening Electives (BDE)	Total
	1	18/19*		11					4	33/34*
Chemistry and	2	22			6	5	3	3		39
Biological	3	18	6		6		1		3	34
Chemistry	4		16				10			26
	Total	58/59*	22	11	12	5	14	3	7	132/133*

ategory		AU	Total Al				
	Common Core (University-level)						
	SP0061 Science & Technology for Humanity	3	_				
	ML0004 Career Design & Workplace Readiness in the V.U.C.A World	2	5				
nterdisciplinary							
Collaborative	Professional Series (College-level)						
Core (ICC)	PS0002 Introduction to Data Science and Artificial Intelligence	3					
core (icc)	CM4081 Professional Internship	10	14				
	MLXXXX Profession Preparation	1					
	Care, Serve, Learn (University-level)	3	3				
	CHEM Core						
	CM1001 Foundations of Chemistry I	4					
	CM1002 Foundations of Chemistry II	4					
	CB1102 Introduction to Chemistry, Chemical and Biomedical Engineering	1					
	MH1802 Calculus for the Sciences	4					
	CM1804 Mathematics for Chemistry	2					
	PH1011 Physics or PH1012* Physics A	3/4*					
	CM2011 Analytical and Bioanalytical Chemistry	3					
	CM2021 Inorganic and Bioinorganic Chemistry	3					
	CM2061 Chemistry & Biological Chemistry Laboratory 1	3					
	CM2031 Organic and Bioorganic Chemistry	3					
	CM2041 Physical and Biophysical Chemistry 1	3	58/59				
Major	CM2062 Chemistry & Biological Chemistry Laboratory 2	3					
Requirement	CB2002 Introduction to Chemical and Biological Safety	1					
	PS0001 Introduction to Computational Thinking	3					
	CM3011 ^{&} Chemical Spectroscopy and Applications	3					
	CM3041 ^{&} Physical and Biophysical Chemistry 2	3					
	CM3062 Chemistry & Biological Chemistry Laboratory 4	3					
	CM3031 ^{&} Organic Reaction Mechanisms and Synthesis	3					
	CM3021 ^{&} Organometallic Chemistry	3					
	CM3061 Chemistry & Biological Chemistry Laboratory 3	3					
	Chemistry & biological Chemistry Laboratory 3	3					
	CHEM Major Prescribed Electives (MPE)						
	CM4080 Honours Project 1 4 x MPEs	10	22				
	USP Core (USP-C)	12					
	SP0001 Writing and Reasoning	3					
	SP0002 Ethics	3					
USP	SP0007 Fieldwork and Documentation	3	11				
Requirement	SP0008 Living Well	2					
	USP Broadening Electives (USP-PE)						
	4 x Electives 12						
oadening and I	Deepening Electives (BDE)		7				
Jaacining alla i	sceptiming Electrics (DDE)						
tal			132/13				

Total*Students without 'A' Level Physics will take 'PH1012 Physics A' (4AU).

 $^{^{\}it \&}$ CM3011, CM3021. CM3031, CM3041 are offered in both semesters.

	Study Plan for AY2025-2026 intake						
YP with Pr	ofessional Internship						
Year 1 Sem	ester 1			Year 1 Sen	nester 2		
Course		Туре	AU	Course		Type	AU
CM1001	Foundations of Chemistry I	С	4	CM1002	Foundations of Chemistry II	С	4
MH1802	Calculus for the Sciences	С	4	CM1804	Mathematics for Chemistry	С	2
CB1102	Introduction to Chemistry, Chemical and Biomedical Engineering	С	1	PH1011/	Physics <u>or</u>	С	3
SP0001	Writing and Reasoning	USP-C	3	PH1012*	Physics A (For students without 'A' Level Physics)	С	4
SP0008	Living Well	USP-C	2	SP0002	Ethics	USP-C	3
	BDE 1	BDE	2	SP0007	Field Work and Documentation	USP-C	3
HW0001	Introduction to Academic Communicat	ion #			BDE 2	BDE	2
	mirodaction to Academic Communicat	1011					
[†] for studen	its who have not cleared QET		16				17/18
Year 2 Sem	ester 1			Year 2 Sen	nester 2		
Course		Туре	AU	Course		Type	AU
CM2011	Analytical and Bioanalytical Chemistry	С	3	CM2031	Organic and Bioorganic Chemistry	С	3
CM2021	Inorganic and Bioinorganic Chemistry	С	3	CM2041	Physical and Biophysical Chemistry 1	С	3
CM2061	Chemistry & Biological Chemistry Laboratory 1	С	3	CM2062	Chemistry & Biological Chemistry Laboratory 2	С	3
PS0001	Introduction to Computational Thinking	С	3	CB2002	Introduction to Chemical and Biological Safety	С	1
ML0004	Career Design & Workplace Readiness in the V.U.C.A World	СС	2	PS0002	Introduction to Data Science and Artificial Intelligence	PS	3
XXXX	Care, Serve, Learn	CSL	3	SP0061	Science & Technology for Humanity	CC	3
	USP Elective 1	USP-PE	3		USP Elective 2	USP-PE	3
			20				19
Year 3 Sem	ester 1			Year 3 Sen	nester 2		
Course		Туре	AU	Course		Type	AU
CM3xxx ^{&}	CHEM-Core	С	3	CM3xxx ^{&}	CHEM-Core	С	3
CM3xxx ^{&}	CHEM-Core	С	3	CM3xxx ^{&}	CHEM-Core	С	3
CM3062	Chemistry & Biological Chemistry Laboratory 4	С	3	CM3061	Chemistry & Biological Chemistry Laboratory 3	С	3
MLxxxx	Profession Preparation	PS	1		CHEM MPE 1	MPE	3
	USP Elective 3	USP-PE	3		CHEM MPE 2	MPE	3
	USP Elective 4	USP-PE	3		BDE 3	BDE	3
			16				18
Year 4 Sem	ester 1			Year 4 Sen	nester 2		
Course		Туре	AU	Course	icotci E	Туре	AU
CM4081	Professional Internship	PS	10	CM4080	Honours Project 1	MPE	10
C 1001	c. coolonal internatinp	. 5	10	C.717000	CHEM MPE 3	MPE	3
					CHEM MPE 4	MPE	3
			10				16
					Total (AU)		132/1

This study plan is meant as a guide.

*Students without 'A' Level Physics will take 'PH1012 Physics A' (4AU).

& CM3xxx refers to CM3011, CM3021, CM3031, CM3041 - These courses are offered in both semesters

BSc in Chemistry and Biological Chemistry (CHEM) - USP

AY2025 - 2026 Intake onwards

Major

Requirement

USP

Requirement

Total

PS0001

4 x MPEs

SP0002

SP0007

SP0008

4 x Electives

Broadening and Deepening Electives (BDE)

USP Core (USP-C) SP0001 Writing

Ethics

Living Well

USP Broadening Electives (USP-PE)

FYP with Professional Attachment

			Number of Academic Units (AU)										
	Year of	Major Re	Major Requirement		uirement	Interdiscip	linary Collabo	rative Core	Broadening and				
Programme	Study	Core (C)	Major PE (MPE)	USP Core (USP-C)	USP Broadening Electives (USP-PE)	Common Core (CC)	Professional Series (PS)	Care, Serve and Learn (CSL)	Deepening Electives (BDE)	Total			
	1	18/19*		11					5	34/35*			
Chemistry and	2	22			6	5	3	3		39			
Biological	3	18			6		6		7	37			
Chemistry	4		22							22			
	Total	58/59*	22	11	12	5	9	3	12	132/133			
Sc in Chemistry	and Biolo	gical Chemist	ry (CHEM)										
Category									AU	Total A			
	Common	Core (Univers	ity-level)										
	SP0061 Sc	ience & Techr	ology for Huma	nity					3	5			
	ML0004 C	areer Design 8	2	,									
Interdisciplinary													
Collaborative	Profession	nal Series (Col	lege-level)										
Core (ICC)	PS0002 In	S0002 Introduction to Data Science and Artificial Intelligence											
core (ree)	CM4081 F	14081 Professional Internship											
	MLXXXX P	XXXX Profession Preparation											
	Care, Serv	3	3										
	1												
	CHEM Cor												
	CM1001		of Chemistry I						4				
	CM1002		of Chemistry II		N 1 1				4				
	CB1102		to Chemistry, Ch	nemical and E	siomedical Eng	ineering			1				
	MH1802 Calculus for the Sciences CM1804 Mathematics for Chemistry								4				
	CM1804		,						2				
	PH1011	. —	I1012* Physics A						3/4*				
	CM2011	•	d Bioanalytical C	•					3				
	CM2021		d Bioinorganic Ch	,	- m . 1				3				
	CM2061	Chemistry &	Biological Chemi	istry Laborati	ory 1				3				

3

3

3

1

3

3

3

3

3

3

3

10

12

3

3

3

2

12

58/59*

22

11

12

12 **132/133***

*Students without	'A' Level Physic	s will take 'PH	11012 Physics A'	(4AU).
0				

CM2031 Organic and Bioorganic Chemistry

CM2041 Physical and Biophysical Chemistry 1

CM2062 Chemistry & Biological Chemistry Laboratory 2

CB2002 Introduction to Chemical and Biological Safety

CM3062 Chemistry & Biological Chemistry Laboratory 4

CM3061 Chemistry & Biological Chemistry Laboratory 3

CM3031[&] Organic Reaction Mechanisms and Synthesis

CM3011[&] Chemical Spectroscopy and Applications

CM3041[&] Physical and Biophysical Chemistry 2

CM3021[&] Organometallic Chemistry

CHEM Major Prescribed Electives (MPE)
CM4080 Honours Project 1

Writing and Reasoning

Fieldwork and Documentation

Introduction to Computational Thinking

[&]amp; CM3011, CM3021. CM3031, CM3041 are offered in both semesters.

	emistry and Biological Chemistry) - USP Study Plan for AY2025-2026 intake						
	rofessional Attachment						
Year 1 Sem	nester 1			Year 1 Sem	nester 2		
Course		Type	AU	Course		Туре	AU
CM1001	Foundations of Chemistry I	С	4	CM1002	Foundations of Chemistry II	С	4
MH1802	Calculus for the Sciences Introduction to Chemistry, Chemical	С	4	CM1804	Mathematics for Chemistry	С	2
CB1102	and Biomedical Engineering	С	1	PH1011/	Physics <u>or</u> Physics A (For students without 'A'	С	3
SP0001	Writing and Reasoning	USP-C	3	PH1012*	Physics A (For students without 'A' Level Physics)	С	4
SP0008	Living Well	USP-C	2	SP0002	Ethics	USP-C	3
	BDE 1	BDE	3	SP0007	Field Work and Documentation BDE 2	USP-C BDE	3 2
HW0001	Introduction to Academic Communicat	tion #					
			17				17/18*
for studer	nts who have not cleared QET						-
Year 2 Sem	nester 1			Year 2 Sem	nester 2		
Course		Type	AU	Course		Туре	AU
CM2011	Analytical and Bioanalytical Chemistry	С	3	CM2031	Organic and Bioorganic Chemistry	С	3
CM2021	Inorganic and Bioinorganic Chemistry	С	3	CM2041	Physical and Biophysical Chemistry 1	С	3
CM2061	Chemistry & Biological Chemistry Laboratory 1	С	3	CM2062	Chemistry & Biological Chemistry Laboratory 2	С	3
PS0001	Introduction to Computational Thinking	С	3	CB2002	Introduction to Chemical and Biological Safety	С	1
ML0004	Career Design & Workplace Readiness in the V.U.C.A World	СС	2	PS0002	Introduction to Data Science and Artificial Intelligence	PS	3
XXXX	Care, Serve, Learn	CSL	3	SP0061	Science & Technology for Humanity	CC	3
	USP Elective 1	USP-PE	3		USP Elective 2	USP-PE	3
			20				19
Year 3 Sem	nester 1			Year 3 Sem	nester 2		
Course		Type	AU	Course		Туре	AU
CM3xxx ^{&}	CHEM-Core	С	3	CM3xxx ^{&}	CHEM-Core	С	3
CM3xxx ^{&}	CHEM-Core	С	3	CM3xxx ^{&}	CHEM-Core	С	3
CM3062	Chemistry & Biological Chemistry Laboratory 4	С	3	CM3061	Chemistry & Biological Chemistry Laboratory 3	С	3
MLxxxx	Profession Preparation	PS	1		USP Elective 4	USP-PE	3
	USP Elective 3	USP-PE	3		BDE 5	BDE	2
	BDE 3	BDE	3				-
	BDE 4	BDE	2				
				Year 3 Spe	cial Sem		
				CM4082	Professional Attachment	PS	5
			18				19
Year 4 Sem	nester 1			Year 4 Sem	nester 2		
Course		Type	AU	Course		Туре	AU
	CHEM MPE 1	MPE	3	CM4080	Honours Project 1	MPE	10
	CHEM MPE 2	MPE	3	-		•	
	CHEM MPE 3	MPE	3				
	CHEM MPE 4	MPE	3				
			12				10
					Total (AU)		132/133
					Total (AO)		132/ 133

This study plan is meant as a guide.

^{*}Students without 'A' Level Physics will take 'PH1012 Physics A' (4AU).

 $^{^{\&}amp;}$ CM3xxx refers to CM3011, CM3021, CM3031, CM3041 - These courses are offered in both semesters

BSc in Chemistry and Biological Chemistry (CHEM) - USP AY2025 - 2026 Intake onwards with Professional Internship

					Number	of Academ	ic Units (AU)			
	Year of	Major Requirement		USP Requirement		Interdisciplinary Collaborative Core			Broadening	
Programme	Study	Core (C)	Major PE (MPE)	USP Core (USP-C)	USP Broadening Electives (USP-PE)	Common Core (CC)	Professional Series (PS)	Care, Serve and Learn (CSL)	and Deepening Electives (BDE)	Total
	1	18/19*		11					6	35/36*
Chemistry and	2	22			6	5	3	3		39
Biological	3	18			6		1		9	34
Chemistry	4		12				10		2	24
	Total	58/59*	12	11	12	5	14	3	17	132/133*

	and Biological Chemistry (CHEM)						
Category		AU	Total AU				
	Common Core (University-level)						
	SP0061 Science & Technology for Humanity	3	5				
	ML0004 Career Design & Workplace Readiness in the V.U.C.A World	2	3				
Interdisciplinary							
Collaborative Cor	Professional Series (College-level)						
(ICC)	PS0002 Introduction to Data Science and Artificial Intelligence	3					
(ICC)	CM4081 Professional Internship	10	14				
	MLXXXX Profession Preparation	1					
	Care, Serve, Learn (University-level)	3	3				
	cure, serve, searn (oniversity rever)						
	CHEM Core						
	CM1001 Foundations of Chemistry I	4					
	CM1002 Foundations of Chemistry II	4					
	CB1102 Introduction to Chemistry, Chemical and Biomedical Engineering	1					
	MH1802 Calculus for the Sciences	4					
	CM1804 Mathematics for Chemistry	2					
	PH1011 Physics or PH1012* Physics A	3/4*					
	CM2011 Analytical and Bioanalytical Chemistry	3					
	CM2021 Inorganic and Bioinorganic Chemistry	3					
	CM2061 Chemistry & Biological Chemistry Laboratory 1	3					
	CM2031 Organic and Bioorganic Chemistry	3					
Major	CM2041 Physical and Biophysical Chemistry 1	3	58/59*				
Requirement	CM2062 Chemistry & Biological Chemistry Laboratory 2	3					
ricquirement	CB2002 Introduction to Chemical and Biological Safety	1					
	PS0001 Introduction to Computational Thinking	3					
	CM3011 ^{&} Chemical Spectroscopy and Applications	3					
	CM3011® Chemical spectroscopy and Applications CM3041® Physical and Biophysical Chemistry 2	_					
		3					
	CM3062 Chemistry & Biological Chemistry Laboratory 4	3					
	CM3031 ^{&} Organic Reaction Mechanisms and Synthesis	3					
	CM3021 ^{&} Organometallic Chemistry	3					
	CM3061 Chemistry & Biological Chemistry Laboratory 3	3					
	CHEM Major Prescribed Electives (MPE)						
	4 x MPEs	12	12				
	USP Core (USP-C)						
	SP0001 Writing and Reasoning	3					
	SP0002 Ethics	3	11				
USP	SP0007 Fieldwork and Documentation	3	11				
Requirement	SP0008 Living Well	2					
	USP Broadening Electives (USP-PE)						
	4 x Electives 12						
		•					
roadening and D	eepening Electives (BDE)		17				
Гotal			132/133				

^{*}Students without 'A' Level Physics will take 'PH1012 Physics A' (4AU).

 $^{^{\&}amp;}$ CM3011, CM3021. CM3031, CM3041 are offered in both semesters.

-	mistry and Biological Chemistry) - USP						
	Study Plan for AY2025-2026 intake						
Witti Frojes:	sional internship						
Year 1 Sem	iester 1			Year 1 Sen	nester 2		
Course		Туре	AU	Course		Туре	AU
CM1001	Foundations of Chemistry I	С	4	CM1002	Foundations of Chemistry II	С	4
MH1802	Calculus for the Sciences	С	4	CM1804	Mathematics for Chemistry	С	2
CB1102	Introduction to Chemistry, Chemical and Biomedical Engineering	С	1	PH1011/	Physics <u>or</u>	С	3
SP0001	Writing and Reasoning	USP-C	3	PH1012*	Physics A (For students without 'A' Level Physics)	С	4
SP0008	Living Well	USP-C	2	SP0002	Ethics	USP-C	3
	BDE 1	BDE	3	SP0007	Field Work and Documentation	USP-C	3
HW0001	Introduction to Academic Communicati	tion #			BDE 2	BDE	3
			17				18/19*
# for studen	nts who have not cleared QET		1,				10, 10
,							
Year 2 Sem	ester 1			Year 2 Sen	nester 2		
Course		Туре	AU	Course		Туре	AU
CM2011	Analytical and Bioanalytical Chemistry	С	3	CM2031	Organic and Bioorganic Chemistry	С	3
CM2021	Inorganic and Bioinorganic Chemistry	С	3	CM2041	Physical and Biophysical Chemistry 1	С	3
CM2061	Chemistry & Biological Chemistry Laboratory 1	С	3	CM2062	Chemistry & Biological Chemistry Laboratory 2	С	3
PS0001	Introduction to Computational Thinking	С	3	CB2002	Introduction to Chemical and Biological Safety	С	1
ML0004	Career Design & Workplace Readiness in the V.U.C.A World	СС	2	PS0002	Introduction to Data Science and Artificial Intelligence	PS	3
XXXX	Care, Serve, Learn	CSL	3	SP0061	Science & Technology for Humanity	CC	3
	USP Elective 1	USP-PE	3		USP Elective 2	USP-PE	3
			20				19
Year 3 Sem	iester 1			Year 3 Sen	nester 2		
Course		Туре	AU	Course		Туре	AU
CM3xxx ^{&}	CHEM-Core	C	3	CM3xxx ^{&}	CHEM-Core	C	3
CM3xxx ^{&}	CHEM-Core	C	3	CM3xxx ^{&}	CHEM-Core	С	3
CM3062	Chemistry & Biological Chemistry			CM3061	Chemistry & Biological Chemistry		
	Laboratory 4	С	3	CIVISUDI	Laboratory 3	С	3
MLxxxx	Profession Preparation	PS	1		USP Elective 4	USP-PE	3
	USP Elective 3	USP-PE	3		BDE 5	BDE	3
	BDE 3	BDE	2		BDE 6	BDE	2
	BDE 4	BDE	2				
			17				17
Year 4 Sem	ester 1			Year 4 Sen	nester 2		
Course		Туре	AU	Course		Type	AU
CM4081	Professional Internship	PS	10		CHEM MPE 1	MPE	3
					CHEM MPE 2	MPE	3
					CHEM MPE 3	MPE	3
					CHEM MPE 4	MPE	3
					BDE 7	BDE	2
			10				14
					Total (AU)		132/133

This study plan is meant as a guide.

^{*}Students without 'A' Level Physics will take 'PH1012 Physics A' (4AU).

& CM3xxx refers to CM3011, CM3021, CM3031, CM3041 - These courses are offered in both semesters