

BSc in Chemistry and Biological Chemistry (CHEM) - USP										
AY2025 - 2026 Intake onwards										
FYP with Professional Internship										
Programme	Year of Study	Number of Academic Units (AU)								
		Major Requirement		USP Requirement		Interdisciplinary Collaborative Core			Broadening and Deepening Electives (BDE)	Total
		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)		
Chemistry and Biological Chemistry	1	18/19*		11					4	33/34*
	2	22			6	5	3	3		39
	3	18	6		6		1		3	34
	4	16					10			26
	Total	58/59*	22	11	12	5	14	3	7	132/133*
BSc in Chemistry and Biological Chemistry (CHEM)										
Category									AU	Total AU
Interdisciplinary Collaborative Core (ICC)	Common Core (University-level)									
	SP0061 Science & Technology for Humanity								3	
	ML0004 Career Design & Workplace Readiness in the V.U.C.A World								2	5
	Professional Series (College-level)									
	PS0002 Introduction to Data Science and Artificial Intelligence								3	
	CM4081 Professional Internship								10	14
	MLXXXX Profession Preparation								1	
	Care, Serve, Learn (University-level)								3	3
Major Requirement	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 <u>or</u> 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	
	CM2062 Chemistry & Biological Chemistry Laboratory 2								3	
	CB2002 Introduction to Chemical and Biological Safety								1	
	PS0001 Introduction to Computational Thinking								3	
	CM3011 <sup>&amp;</sup> Chemical Spectroscopy and Applications								3	
	CM3041 <sup>&amp;</sup> Physical and Biophysical Chemistry 2								3	
	CM3062 Chemistry & Biological Chemistry Laboratory 4								3	
	CM3031 <sup>&amp;</sup> Organic Reaction Mechanisms and Synthesis								3	
	CM3021 <sup>&amp;</sup> Organometallic Chemistry								3	
	CM3061 Chemistry & Biological Chemistry Laboratory 3								3	
	CHEM Major Prescribed Electives (MPE)									
	CM4080 Honours Project 1								10	
	4 x MPEs								12	22
USP Requirement	USP Core (USP-C)									
	SP0001 Writing and Reasoning								3	
	SP0002 Ethics								3	
	SP0007 Fieldwork and Documentation								3	
	SP0008 Living Well								2	11
USP Broadening Electives (USP-PE)										
4 x Electives								12	12	
Broadening and Deepening Electives (BDE)										7
Total										132/133*

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

<sup>&</sup> CM3011, CM3021. CM3031, CM3041 are offered in both semesters.

**B.Sci. (Chemistry and Biological Chemistry) - USP****Suggested Study Plan for AY2025-2026 intake**

FYP with Professional Internship

**Year 1 Semester 1**

Course		Type	AU
CM1001	Foundations of Chemistry I	C	4
MH1802	Calculus for the Sciences	C	4
CB1102	Introduction to Chemistry, Chemical and Biomedical Engineering	C	1
SP0001	Writing and Reasoning	USP-C	3
SP0008	Living Well	USP-C	2
	BDE 1	BDE	2
HW0001	Introduction to Academic Communication <sup>#</sup>		

**16**<sup>#</sup> for students who have not cleared QET**Year 2 Semester 1**

Course		Type	AU
CM2011	Analytical and Bioanalytical Chemistry	C	3
CM2021	Inorganic and Bioinorganic Chemistry	C	3
CM2061	Chemistry & Biological Chemistry Laboratory 1	C	3
PS0001	Introduction to Computational Thinking	C	3
ML0004	Career Design & Workplace Readiness in the V.U.C.A World	CC	2
XXXX	Care, Serve, Learn	CSL	3
	USP Elective 1	USP-PE	3

**20****Year 3 Semester 1**

Course		Type	AU
CM3xxx <sup>&amp;</sup>	CHEM-Core	C	3
CM3xxx <sup>&amp;</sup>	CHEM-Core	C	3
CM3062	Chemistry & Biological Chemistry Laboratory 4	C	3
MLxxxx	Profession Preparation	PS	1
	USP Elective 3	USP-PE	3
	USP Elective 4	USP-PE	3

**16****Year 4 Semester 1**

Course		Type	AU
CM4081	Professional Internship	PS	10

**10****Year 1 Semester 2**

Course		Type	AU
CM1002	Foundations of Chemistry II	C	4
CM1804	Mathematics for Chemistry	C	2
PH1011/	Physics <u>or</u>	C	3
PH1012*	Physics A (For students without 'A' Level Physics)	C	4
SP0002	Ethics	USP-C	3
SP0007	Field Work and Documentation	USP-C	3
	BDE 2	BDE	2

**17/18\*****Year 2 Semester 2**

Course		Type	AU
CM2031	Organic and Bioorganic Chemistry	C	3
CM2041	Physical and Biophysical Chemistry 1	C	3
CM2062	Chemistry & Biological Chemistry Laboratory 2	C	3
CB2002	Introduction to Chemical and Biological Safety	C	1
PS0002	Introduction to Data Science and Artificial Intelligence	PS	3
SP0061	Science & Technology for Humanity	CC	3
	USP Elective 2	USP-PE	3

**19****Year 3 Semester 2**

Course		Type	AU
CM3xxx <sup>&amp;</sup>	CHEM-Core	C	3
CM3xxx <sup>&amp;</sup>	CHEM-Core	C	3
CM3061	Chemistry & Biological Chemistry Laboratory 3	C	3
	CHEM MPE 1	MPE	3
	CHEM MPE 2	MPE	3
	BDE 3	BDE	3

**18****Year 4 Semester 2**

Course		Type	AU
CM4080	Honours Project 1	MPE	10
	CHEM MPE 3	MPE	3
	CHEM MPE 4	MPE	3

**16****Total (AU)****132/133\***

This study plan is meant as a guide.

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

<sup>&</sup> 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										
FYP with Professional Attachment										
Programme	Year of Study	Number of Academic Units (AU)								
		Major Requirement		USP Requirement		Interdisciplinary Collaborative Core			Broadening and Deepening Electives (BDE)	Total
		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)		
Chemistry and Biological Chemistry	1	18/19*		11					5	34/35*
	2	22			6	5	3	3		39
	3	18			6		6		7	37
	4		22							22
	Total	58/59*	22	11	12	5	9	3	12	132/133*
BSc in Chemistry and Biological Chemistry (CHEM)										
Category									AU	Total AU
Interdisciplinary Collaborative Core (ICC)	Common Core (University-level)									
	SP0061 Science & Technology for Humanity								3	5
	ML0004 Career Design & Workplace Readiness in the V.U.C.A World								2	
	Professional Series (College-level)									
PS0002 Introduction to Data Science and Artificial Intelligence								3	9	
CM4081 Professional Internship								5		
MLXXXX Profession Preparation								1		
Care, Serve, Learn (University-level)								3	3	
Major Requirement	CHEM Core									58/59*
	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	
	CM2062 Chemistry & Biological Chemistry Laboratory 2								3	
	CB2002 Introduction to Chemical and Biological Safety								1	
	PS0001 Introduction to Computational Thinking								3	
	CM3011 <sup>&amp;</sup> Chemical Spectroscopy and Applications								3	
	CM3041 <sup>&amp;</sup> Physical and Biophysical Chemistry 2								3	
	CM3062 Chemistry & Biological Chemistry Laboratory 4								3	
	CM3031 <sup>&amp;</sup> Organic Reaction Mechanisms and Synthesis								3	
	CM3021 <sup>&amp;</sup> Organometallic Chemistry								3	
	CM3061 Chemistry & Biological Chemistry Laboratory 3								3	
	CHEM Major Prescribed Electives (MPE)									22
	CM4080 Honours Project 1								10	
4 x MPEs								12		
USP Requirement	USP Core (USP-C)									11
	SP0001 Writing and Reasoning								3	
	SP0002 Ethics								3	
	SP0007 Fieldwork and Documentation								3	
	SP0008 Living Well								2	
USP Broadening Electives (USP-PE)									12	
4 x Electives								12		
Broadening and Deepening Electives (BDE)										12
Total										132/133*

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

<sup>&</sup> CM3011, CM3021. CM3031, CM3041 are offered in both semesters.

**B.Sci. (Chemistry and Biological Chemistry) - USP****Suggested Study Plan for AY2025-2026 intake**

FYP with Professional Attachment

**Year 1 Semester 1**

Course		Type	AU
CM1001	Foundations of Chemistry I	C	4
MH1802	Calculus for the Sciences	C	4
CB1102	Introduction to Chemistry, Chemical and Biomedical Engineering	C	1
SP0001	Writing and Reasoning	USP-C	3
SP0008	Living Well	USP-C	2
	BDE 1	BDE	3
HW0001	Introduction to Academic Communication <sup>#</sup>		

**17**<sup>#</sup> for students who have not cleared QET**Year 2 Semester 1**

Course		Type	AU
CM2011	Analytical and Bioanalytical Chemistry	C	3
CM2021	Inorganic and Bioinorganic Chemistry	C	3
CM2061	Chemistry & Biological Chemistry Laboratory 1	C	3
PS0001	Introduction to Computational Thinking	C	3
ML0004	Career Design & Workplace Readiness in the V.U.C.A World	CC	2
XXXX	Care, Serve, Learn	CSL	3
	USP Elective 1	USP-PE	3

**20****Year 3 Semester 1**

Course		Type	AU
CM3xxx <sup>&amp;</sup>	CHEM-Core	C	3
CM3xxx <sup>&amp;</sup>	CHEM-Core	C	3
CM3062	Chemistry & Biological Chemistry Laboratory 4	C	3
MLxxxx	Profession Preparation	PS	1
	USP Elective 3	USP-PE	3
	BDE 3	BDE	3
	BDE 4	BDE	2

**18****Year 4 Semester 1**

Course		Type	AU
	CHEM MPE 1	MPE	3
	CHEM MPE 2	MPE	3
	CHEM MPE 3	MPE	3
	CHEM MPE 4	MPE	3

**12****Year 1 Semester 2**

Course		Type	AU
CM1002	Foundations of Chemistry II	C	4
CM1804	Mathematics for Chemistry	C	2
PH1011/	Physics <u>or</u>	C	3
PH1012*	Physics A (For students without 'A' Level Physics)	C	4
SP0002	Ethics	USP-C	3
SP0007	Field Work and Documentation	USP-C	3
	BDE 2	BDE	2

**17/18\*****Year 2 Semester 2**

Course		Type	AU
CM2031	Organic and Bioorganic Chemistry	C	3
CM2041	Physical and Biophysical Chemistry 1	C	3
CM2062	Chemistry & Biological Chemistry Laboratory 2	C	3
CB2002	Introduction to Chemical and Biological Safety	C	1
PS0002	Introduction to Data Science and Artificial Intelligence	PS	3
SP0061	Science & Technology for Humanity	CC	3
	USP Elective 2	USP-PE	3

**19****Year 3 Semester 2**

Course		Type	AU
CM3xxx <sup>&amp;</sup>	CHEM-Core	C	3
CM3xxx <sup>&amp;</sup>	CHEM-Core	C	3
CM3061	Chemistry & Biological Chemistry Laboratory 3	C	3
	USP Elective 4	USP-PE	3
	BDE 5	BDE	2

**Year 3 Special Sem**

CM4082	Professional Attachment	PS	5
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**19****Year 4 Semester 2**

Course		Type	AU
CM4080	Honours Project 1	MPE	10

**10****Total (AU)****132/133\***

This study plan is meant as a guide.

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

<sup>&</sup> 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										
Programme	Year of Study	Number of Academic Units (AU)								
		Major Requirement		USP Requirement		Interdisciplinary Collaborative Core			Broadening and Deepening Electives (BDE)	Total
		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)		
Chemistry and Biological Chemistry	1	18/19*		11					6	35/36*
	2	22			6	5	3	3		39
	3	18			6		1		9	34
	4		12				10		2	24
	Total	58/59*	12	11	12	5	14	3	17	132/133*
BSc in Chemistry and Biological Chemistry (CHEM)										
Category									AU	Total AU
Interdisciplinary Collaborative Core (ICC)	Common Core (University-level)									
	SP0061 Science & Technology for Humanity								3	5
	ML0004 Career Design & Workplace Readiness in the V.U.C.A World								2	
	Professional Series (College-level)									
	PS0002 Introduction to Data Science and Artificial Intelligence								3	14
CM4081 Professional Internship								10		
MLXXXX Profession Preparation								1		
Care, Serve, Learn (University-level)								3	3	
Major Requirement	CHEM Core									58/59*
	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	
	CM2062 Chemistry & Biological Chemistry Laboratory 2								3	
	CB2002 Introduction to Chemical and Biological Safety								1	
	PS0001 Introduction to Computational Thinking								3	
	CM3011 <sup>&amp;</sup> Chemical Spectroscopy and Applications								3	
	CM3041 <sup>&amp;</sup> Physical and Biophysical Chemistry 2								3	
	CM3062 Chemistry & Biological Chemistry Laboratory 4								3	
	CM3031 <sup>&amp;</sup> Organic Reaction Mechanisms and Synthesis								3	
	CM3021 <sup>&amp;</sup> Organometallic Chemistry								3	
	CM3061 Chemistry & Biological Chemistry Laboratory 3								3	
CHEM Major Prescribed Electives (MPE)										
4 x MPEs								12	12	
USP Requirement	USP Core (USP-C)									11
	SP0001 Writing and Reasoning								3	
	SP0002 Ethics								3	
	SP0007 Fieldwork and Documentation								3	
	SP0008 Living Well								2	
USP Broadening Electives (USP-PE)										
4 x Electives								12	12	
Broadening and Deepening Electives (BDE)										17
Total										132/133*

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

<sup>&</sup> CM3011, CM3021, CM3031, CM3041 are offered in both semesters.

**B.Sci. (Chemistry and Biological Chemistry) - USP**  
**Suggested Study Plan for AY2025-2026 intake**  
*with Professional Internship*

**Year 1 Semester 1**

Course		Type	AU
CM1001	Foundations of Chemistry I	C	4
MH1802	Calculus for the Sciences	C	4
CB1102	Introduction to Chemistry, Chemical and Biomedical Engineering	C	1
SP0001	Writing and Reasoning	USP-C	3
SP0008	Living Well	USP-C	2
	BDE 1	BDE	3
HW0001	Introduction to Academic Communication <sup>#</sup>		

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<sup>#</sup> for students who have not cleared QET

**Year 2 Semester 1**

Course		Type	AU
CM2011	Analytical and Bioanalytical Chemistry	C	3
CM2021	Inorganic and Bioinorganic Chemistry	C	3
CM2061	Chemistry & Biological Chemistry Laboratory 1	C	3
PS0001	Introduction to Computational Thinking	C	3
ML0004	Career Design & Workplace Readiness in the V.U.C.A World	CC	2
XXXX	Care, Serve, Learn	CSL	3
	USP Elective 1	USP-PE	3

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**Year 3 Semester 1**

Course		Type	AU
CM3xxx <sup>&amp;</sup>	CHEM-Core	C	3
CM3xxx <sup>&amp;</sup>	CHEM-Core	C	3
CM3062	Chemistry & Biological Chemistry Laboratory 4	C	3
MLxxxx	Profession Preparation	PS	1
	USP Elective 3	USP-PE	3
	BDE 3	BDE	2
	BDE 4	BDE	2

**17**

**Year 4 Semester 1**

Course		Type	AU
CM4081	Professional Internship	PS	10

**10**

**Year 1 Semester 2**

Course		Type	AU
CM1002	Foundations of Chemistry II	C	4
CM1804	Mathematics for Chemistry	C	2
PH1011/	Physics <u>or</u>	C	3
PH1012*	Physics A (For students without 'A' Level Physics)	C	4
SP0002	Ethics	USP-C	3
SP0007	Field Work and Documentation	USP-C	3
	BDE 2	BDE	3

**18/19\***

**Year 2 Semester 2**

Course		Type	AU
CM2031	Organic and Bioorganic Chemistry	C	3
CM2041	Physical and Biophysical Chemistry 1	C	3
CM2062	Chemistry & Biological Chemistry Laboratory 2	C	3
CB2002	Introduction to Chemical and Biological Safety	C	1
PS0002	Introduction to Data Science and Artificial Intelligence	PS	3
SP0061	Science & Technology for Humanity	CC	3
	USP Elective 2	USP-PE	3

**19**

**Year 3 Semester 2**

Course		Type	AU
CM3xxx <sup>&amp;</sup>	CHEM-Core	C	3
CM3xxx <sup>&amp;</sup>	CHEM-Core	C	3
CM3061	Chemistry & Biological Chemistry Laboratory 3	C	3
	USP Elective 4	USP-PE	3
	BDE 5	BDE	3
	BDE 6	BDE	2

**17**

**Year 4 Semester 2**

Course		Type	AU
	CHEM MPE 1	MPE	3
	CHEM MPE 2	MPE	3
	CHEM MPE 3	MPE	3
	CHEM MPE 4	MPE	3
	BDE 7	BDE	2

**14**

**Total (AU)**

**132/133\***

*This study plan is meant as a guide.*

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

*<sup>&</sup> CM3xxx refers to CM3011, CM3021, CM3031, CM3041 - These courses are offered in both semesters*