

BSc in Chemistry and Biological Chemistry with 2nd Major in Environmental Science (CHES)

AY2021 - 2022 Intake

with Professional Internship

Programme	Year of Study	Number of Academic Units (AU)					Total
		Major Requirement		Interdisciplinary		Broadening and Deepening Electives	
		Core (C)	Major PE (MPE)	Common Core (CC)	Foundational Core (FC)		
Chemistry and Biological Chemistry	1	24		9		8	41
	2	21		8	3	6	38
	3	18			2	19	39
	4		12		10	6	28
	Total	63	12	17	15	39	146

BSc in Chemistry and Biological Chemistry with 2nd Major in Environmental Science (CHES)

Category		AU	Total AU
Interdisciplinary Collaborative Core (ICC)	Common Core (University-level)		
	CC0001 Inquiry and Communication in the Interdisciplinary World	2	17
	CC0002 Navigating the Digital World	2	
	CC0003 Ethics & Civics in a Multi-Cultural World	2	
	CC0005 Healthy Living & Wellbeing	3	
	CC0006 Sustainability: Society, Economy & Environment	3	
	CC0007 Science & Technology for Humanity	3	
	ML0004 Career and Entrepreneurial Development for the Future World	2	
	Foundational Core (College-level)		
	HW0218 Communication Across the Sciences	2	10
PS0002 Introduction to Data Science and Artificial Intelligence	3		
CM4082 Professional Attachment	5		
Major Requirement	CHEM Core		
	CM1021 Basic Inorganic Chemistry with Laboratory	4	24
	CM1031 Basic Organic Chemistry with Laboratory	4	
	MH1802 Calculus for the Sciences	4	
	CM1041 Basic Physical Chemistry with Laboratory	4	
	CM1051 Basic Biological Chemistry	3	
	MH1804 Mathematics for Chemistry	2	
PH1801 Foundation of Physics 1	3		

Major Requirement	CM2011	Analytical Chemistry	3	39
	CM2021	Inorganic and Bioinorganic Chemistry	3	
	CM2061	Chemistry & Biological Chemistry Laboratory 1	3	
	PS0001	Introduction to Computational Thinking	3	
	CM2031	Organic and Bioorganic Chemistry	3	
	CM2041	Physical and Biophysical Chemistry 1	3	
	CM2062	Chemistry & Biological Chemistry Laboratory 2	3	
	CM3011	Chemical Spectroscopy and Applications	3	
	CM3041	Physical and Biophysical Chemistry 2	3	
	CM3062	Chemistry & Biological Chemistry Laboratory 4	3	
	CM3021	Organometallic Chemistry	3	
	CM3031	Organic Reaction Mechanisms and Synthesis	3	
	CM3061	Chemistry & Biological Chemistry Laboratory 3	3	
	CHEM Major Prescribed Electives (MPE)			
CM4080	Honours Project 1	10	22	
4 x MPEs		12		

2nd Major in Environmental Science (CHES)	Environmental Science Compulsory Courses			30	
	1) ES1001 E2S2 Environment and Society		4		
	2) ES2003 E2S2 Biosphere		4		
	3) ES3003 Introduction to Geochemistry		4		
	4) ES8001 Natural Hazards, Climate Change and Society		3		
	5) ES8005 Environmental Earth Systems Science		3		
	6) ES8006 Environmental Sustainability		3		
	Choose 3 Courses from the following list				
	1) ES1007 Climate Change		3		
	2) ES3801 Biogeochemistry		3		
	3) EM9101 Environmental Quality		3		
	4) EM9104 Air Quality Management		3		
	5) EM9105 Energy Resources Management		3		
	6) EM9107 Environmental Health and Safety Management		3		

BDE	Any 2 BDE	4	4
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Total

146

BSc in Chemistry and Biological Chemistry with 2nd Major in Environmental Science (CHES)**Suggested Study Plan for AY2021-2022 intake***with Professional Internship***Year 1 Semester 1**

Course	Type	AU
CM1021 Basic Inorganic Chemistry with Laboratory	C	4
CM1031 Basic Organic Chemistry with Laboratory	C	4
MH1802 Calculus for the Sciences	C	4
CC0001 Inquiry and Communication in an Interdisciplinary World	CC	2
CC0002 Navigating the Digital World	CC	2
ES1001 Environment and Society	BDE	4

HW0001 *Introduction to Academic Communication****20****for students who have not cleared QET***Year 2 Semester 1**

Course	Type	AU
CM2011 Analytical 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
CC0006 Sustainability: Society, Economy & Environment	CC	3
CC0007 Science & Technology for Humanity	CC	3
ES8001 Natural Hazards and Society	BDE	3

21**Year 3 Semester 1**

Course	Type	AU
CM3011 Chemical Spectroscopy and Applications	C	3
CM3041 Physical and Biophysical Chemistry 2	C	3
CM3062 Chemistry & Biological Chemistry Laboratory 4	C	3
ES3003 Introduction to Geochemistry	BDE	4
ES8005 Environmental Earth Systems Science	BDE	3
Broadening and Deepening Elective 1	BDE	3

19**Year 4 Semester 1**

Course	Type	AU
CM4XXX CHEM MPE	MPE	3
CM4XXX CHEM MPE	MPE	3
CM4XXX CHEM MPE	MPE	3
CM4XXX CHEM MPE	MPE	3
Broadening and Deepening Elective 2	BDE	3
Broadening and Deepening Elective 3	BDE	3

18**Year 1 Semester 2**

Course	Type	AU
CM1041 Basic Physical Chemistry with Laboratory	C	4
CM1051 Basic Biological Chemistry	C	3
MH1804 Mathematics for Chemistry	C	2
PH1801 Foundation of Physics 1	C	3
CC0003 Ethics & Civics in a Multicultural World	CC	2
CC0005 Healthy Living and Wellbeing	CC	3
ES2003 E2S2 Biosphere	BDE	4

21**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
ML0004 Career & Entrepreneurial Development for the Future World	CC	2
PS0002 Introduction to Data Science and Artificial Intelligence	FC	3
ES8006 Environmental Sustainability	BDE	3

17**Year 3 Semester 2**

Course	Type	AU
CM3021 Organometallic Chemistry	C	3
CM3031 Organic Reaction Mechanisms and Synthesis	C	3
CM3061 Chemistry & Biological Chemistry Laboratory 3	C	3
HW0218 Effective Communication 2	FC	2
ES Prescribe Elective	BDE	3
ES Prescribe Elective	BDE	3
ES Prescribe Elective	BDE	3

20**Year 4 Semester 2**

Course	Type	AU
CM4081 Professional Internship	FC	10

10**Total (AU)****146**

BSc in Chemistry and Biological Chemistry with 2nd Major in Environmental Science (CHES)

AY2021 - 2022 Intake

FYP with Professional Attachment

Programme	Year of Study	Number of Academic Units (AU)					Total
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		Core (C)	Major PE (MPE)	Common Core (CC)	Foundational Core (FC)		
Chemistry and Biological Chemistry	1	24		9		8	41
	2	21		8	3	6	38
	3	18			7	18	43
	4		22			2	24
	Total	63	22	17	10	34	146

BSc in Chemistry and Biological Chemistry with 2nd Major in Environmental Science (CHES)

Category	AU	Total AU
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Interdisciplinary Collaborative Core (ICC)	Common Core (University-level)			
	CC0001 Inquiry and Communication in the Interdisciplinary	2	17	
	CC0002 Navigating the Digital World	2		
	CC0003 Ethics & Civics in a Multi-Cultural World	2		
	CC0005 Healthy Living & Wellbeing	3		
	CC0006 Sustainability: Society, Economy & Environment	3		
	CC0007 Science & Technology for Humanity	3		
	ML0004 Career and Entrepreneurial Development for the	2		
	Foundational Core (College-level)			
	HW0218 Communication Across the Sciences	2	10	
PS0002 Introduction to Data Science and Artificial Intelligence	3			
CM4082 Professional Attachment	5			

Major Requirement	CHEM Core			
	CM1021	Basic Inorganic Chemistry with Laboratory	4	24
	CM1031	Basic Organic Chemistry with Laboratory	4	
	MH1802	Calculus for the Sciences	4	
	CM1041	Basic Physical Chemistry with Laboratory	4	
	CM1051	Basic Biological Chemistry	3	
	MH1804	Mathematics for Chemistry	2	
	PH1801	Foundation of Physics 1	3	

Major Requirement	CM2011	Analytical Chemistry	3	39
	CM2021	Inorganic and Bioinorganic Chemistry	3	
	CM2061	Chemistry & Biological Chemistry Laboratory 1	3	
	PS0001	Introduction to Computational Thinking	3	
	CM2031	Organic and Bioorganic Chemistry	3	
	CM2041	Physical and Biophysical Chemistry 1	3	
	CM2062	Chemistry & Biological Chemistry Laboratory 2	3	
	CM3011	Chemical Spectroscopy and Applications	3	
	CM3041	Physical and Biophysical Chemistry 2	3	
	CM3062	Chemistry & Biological Chemistry Laboratory 4	3	
	CM3021	Organometallic Chemistry	3	
	CM3031	Organic Reaction Mechanisms and Synthesis	3	
	CM3061	Chemistry & Biological Chemistry Laboratory 3	3	
	CHEM Major Prescribed Electives (MPE)			
	CM4080	Honours Project 1	10	22
	4 x MPEs		12	

2nd Major in Environmental Science (CHES)	Environmental Science Compulsory Courses			30
	1)	ES1001 E2S2 Environment and Society	4	
	2)	ES2003 E2S2 Biosphere	4	
	3)	ES3003 Introduction to Geochemistry	4	
	4)	ES8001 Natural Hazards, Climate Change and Society	3	
	5)	ES8005 Environmental Earth Systems Science	3	
	6)	ES8006 Environmental Sustainability	3	
	Choose 3 Courses from the following list			
	1)	ES1007 Climate Change	3	
	2)	ES3801 Biogeochemistry	3	
	3)	EM9101 Environmental Quality	3	
	4)	EM9104 Air Quality Management	3	
	5)	EM9105 Energy Resources Management	3	
	6)	EM9107 Environmental Health and Safety Management	3	

BDE	Any 2 BDE	4	4
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Total

146

BSc in Chemistry and Biological Chemistry with 2nd Major in Environmental Science (CHES)

Suggested Study Plan for AY2021-2022 intake

FYP with Professional Attachment Option

Year 1 Semester 1

Course	Type	AU
CM1021 Basic Inorganic Chemistry with Laboratory	C	4
CM1031 Basic Organic Chemistry with Laboratory	C	4
MH1802 Calculus for the Sciences	C	4
CC0001 Inquiry and Communication in an Interdisciplinary World	CC	2
CC0002 Navigating the Digital World	CC	2
ES1001 Environment and Society	BDE	4

HW0001 Introduction to Academic Communication*

20

*for students who have not cleared QET

Year 2 Semester 1

Course	Type	AU
CM2011 Analytical 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
CC0006 Sustainability: Society, Economy & Environment	CC	3
CC0007 Science & Technology for Humanity	CC	3
ES8001 Natural Hazards and Society	BDE	3

21**Year 3 Semester 1**

Course	Type	AU
CM3011 Chemical Spectroscopy and Applications	C	3
CM3041 Physical and Biophysical Chemistry 2	C	3
CM3062 Chemistry & Biological Chemistry Laboratory 4	C	3
ES3003 Introduction to Geochemistry	BDE	4
ES8005 Environmental Earth Systems Science	BDE	3
Broadening and Deepening Elective 1	BDE	2

18**Year 4 Semester 1**

Course	Type	AU
CM4XXX CHEM MPE	MPE	3
CM4XXX CHEM MPE	MPE	3
CM4XXX CHEM MPE	MPE	3
CM4XXX CHEM MPE	MPE	3

12**Year 1 Semester 2**

Course	Type	AU
CM1041 Basic Physical Chemistry with Laboratory	C	4
CM1051 Basic Biological Chemistry	C	3
MH1804 Mathematics for Chemistry	C	2
PH1801 Foundation of Physics 1	C	3
CC0003 Ethics & Civics in a Multicultural World	CC	2
CC0005 Healthy Living and Wellbeing	CC	3
ES2003 E2S2 Biosphere	BDE	4

21**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
ML0004 Career & Entrepreneurial Development for the Future World	CC	2
PS0002 Introduction to Data Science and Artificial Intelligence	FC	3
ES8006 Environmental Sustainability	BDE	3

17**Year 3 Semester 2**

Course	Type	AU
CM3021 Organometallic Chemistry	C	3
CM3031 Organic Reaction Mechanisms and Synthesis	C	3
CM3061 Chemistry & Biological Chemistry Laboratory 3	C	3
HW0218 Effective Communication 2	FC	2
ES Prescribe Elective	BDE	3
ES Prescribe Elective	BDE	3
ES Prescribe Elective	BDE	3

Year 3 Special Sem

Course	Type	AU
CM4082 Professional Attachment	FC	5

25**Year 4 Semester 2**

Course	Type	AU
CM4080 Honours Project 1	MPE	10
Broadening and Deepening Elective 1	BDE	2

12**Total (AU)****146**