## BSc in Chemistry and Biological Chemistry with 2nd Major in Business - International Trading (CHITG)

AY2025 - 2026 Intake onwards

FYP with Professional Internship

		Number of Academic Units (AU)									
Programme	Year of	Major Requirement		Interdiscip	linary Collabo	Broadening and					
rogramme	Study	Core (C)	Major PE (MPE)	Common Core (CC)	Professional Series (PS)	Care, Serve and Learn (CSL)	Deepening Electives (BDE)	Total			
	1	18/19*		8			12	38/39*			
Chemistry and	2	22		6	3	3	8	42			
Biological	3	18	12		3		5	38			
Chemistry	4		10		10		6	26			
	Total	58/59*	22	14	16	3	31	144/145*			

ategory		AU	Total Al
	Common Core (University-level)		
	CC0001 Inquiry & Communication in an Interdisciplinary World	2	
	CC0003 Ethics & Civics in a Multi-Cultural World	2	
	ML0004 Career Design & Workplace Readiness in the V.U.C.A World	2	
	CC0015 Health & Wellbeing	2	14
nterdisciplinary	CC0006 Sustainability: Society, Economy & Environment	3	
	CC0007 Science & Technology for Humanity	3	
Collaborative Core			
(ICC)	Professional Series (College-level)		
	HW0218 Communication Across the Sciences	2	
	PS0002 Introduction to Data Science and Artificial Intelligence	3	16
	CM4081 Professional Internship	10	
	MLXXXX Profession Preparation	1	
	XXXXXX Care, Serve, Learn (University-level)	3	3
		<u>'</u>	1
	CHEM Core CM1001 Foundations of Chemistry I		
	,	4	
	CM1002 Foundations of Chemistry II	4	
	CB1102 Introduction to Chemistry, Chemical and Biomedical Engineering MH1802 Calculus for the Sciences	1	
	2002	4	
	,	2	
	PH1011 Physics or PH1012* Physics A CM2021 Inorganic and Bioinorganic Chemistry	3/4*	
		3	
	CM2011 Analytical Chemistry	3	
	CM2061 Chemistry & Biological Chemistry Laboratory 1	3	
	PS0001 Introduction to Computational Thinking	3	F0/F0
Major	CM2031 Organic and Bioorganic Chemistry	3	58/59
Requirement	CM2041 Physical and Biophysical Chemistry 1	3	
,	CM2062 Chemistry & Biological Chemistry Laboratory 2	3	
	CB2002 Introduction to Chemical and Biological Safety	1	
	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	22
	4 x MPEs	12	22
	Business - International Trading Compulsory Courses		<u> </u>
	1) AB1201 Financial Management	3	
	2) AB1501 Marketing	3	
	3) AD1102 Financial Accounting	3	
	4) AD2102 Management Accounting	3	
2nd Major in	5) BE1402 Business Operations & Process	3	
Business -	6) BF2226 Trade Incoterms & Ship Chartering		
International	7) BF2227 Commodity Markets	3	31
Trading (ITG)	, ,	3	
	8) BF2302 International Tax & Trading Law	2	
	9) BF3212 Trade, Structured & Supply Chain Finance	2	
	10) BF3213 Enterprise Risk Management in Commodity Markets	2	
	11) BF3214 Commodities Trading	2	
	12) BF3226 Strategic Management in Commodity Market	2	<u> </u>

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

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

FYP with Pr	Study Plan for AY2025-2026 intake rofessional Internship						
Year 1 Sem	nester 1			Year 1 Sen	nester 2		
Course	icaci I	Туре	AU	Course	ilester 2	Туре	AU
CM1001	Foundations of Chemistry I	C	4	CM1002	Foundations of Chemistry II	C	4
ин1802	Calculus for the Sciences	С	4	CM1804	Mathematics for Chemistry	С	2
CB1102	Introduction to Chemistry, Chemical	С	1	DU1011/	Physics or	С	3
.B1102	and Biomedical Engineering	C	1	PH1011/	Physics <u>or</u>	C	3
CC0001	Inquiry & Communication in an	СС	2	PH1012*	Physics A (For students without 'A'	С	4
	Interdisciplinary World				Level Physics)		
CC0015	Health & Wellbeing	CC	2	CC0003	Ethics & Civics in a Multi-Cultural World	CC	2
					Career Design & Workplace		
AB1501	Marketing	BDE	3	ML0004	Readiness in the V.U.C.A World	CC	2
BE1402	<b>Business Operations &amp; Process</b>	BDE	3	AD1102	Financial Accounting	BDE	3
				AB1201	Financial Management	BDE	3
HW0001	Introduction to Academic Communicati	ion <sup>#</sup>					
			19				19/20
for studer	nts who have not cleared QET						
ear 2 Sem	nester 1			Year 2 Sen	nester 2		
Course	iestei 1	Туре	AU	Course	ilester 2	Туре	AU
	Analytical and Bioanalytical						
CM2011	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
CIVIZUZI	morganic and Biomorganic Chemistry	C	3	CIVIZU41	rnysicai and biophysicai chemistry 1	C	3
CM2061	Chemistry & Biological Chemistry	С	3	CM2062	Chemistry & Biological Chemistry	С	3
	Laboratory 1				Laboratory 2		
PS0001	Introduction to Computational Thinking	С	3	CB2002	Introduction to Chemical and Biological Safety	С	1
	Sustainability: Society, Economy &				Introduction to Data Science and		
CC0006	Environment	CC	3	PS0002	Artificial Intelligence	PS	3
XXXXX	Care, Serve, Learn	CSL	3	CC0007	Science & Technology for Humanity	CC	3
BF3214	Commodities Trading	BDE	2	AD2102	Management Accounting	BDE	3
				BF2227	Commodity Markets	BDE	3
			20				22
Year 3 Sem	nester 1			Year 3 Sen	nester 2		
Course		Туре	AU	Course		Туре	AU
CM3xxx <sup>&amp;</sup>	CHEM-Core	С	3	CM3xxx <sup>&amp;</sup>	CHEM-Core	C	3
		_	_		Chemistry & Biological Chemistry	_	
CM3xxx <sup>®</sup>	CHEM-Core	С	3	CM3061	Laboratory 3	С	3
CM3xxx <sup>&amp;</sup>	CHEM-Core	С	3	HW0218	Communication Across the Sciences	PS	2
CM3062	Chemistry & Biological Chemistry	С	3		CHEM MPE 2	MPE	3
21413002	Laboratory 4						
	CHEM MPE 1	MPE	3		CHEM MPE 3	MPE	3
MLxxxx	Profession Preparation	PS	1	DESSE	CHEM MPE 4	MPE	3
BF2302	International Tax and Trading Law	BDE	2	BF2226	Trade Incoterms & Ship Chartering	BDE	3
			18				20
ear 4 Sem	nester 1			Year 4 Sen	nester 2		
Course		Туре	AU	Course		Type	AU
CM4081	Professional Internship	PS	10	CM4080	Honours Project 1	MPE	10
				BF3212	Trade, Structured & Supply Chain	BDE	2
				BF3Z1Z	Finance Enterprise Risk Management in		
				BF3213	Commodity Markets	BDE	2
					Strategic Management in Commodity		
				BF3226	Market	BDE	2
			10				16
					Total (AU)		144/1

This study plan is meant as a guide.

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

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

## BSc in Chemistry and Biological Chemistry with 2nd Major in Business - International Trading (CHITG)

AY2025 - 2026 Intake onwards

FYP with Professional Attachme

	Voor of			of Academic U		I		
Programme	Year of Study	Major Re	quirement	Interdiscip	Broadening and Deepening	Total		
	Study	Core (C)	Major PE (MPE)	Common Core (CC)	Professional Series (PS)	Care, Serve and Learn (CSL)	Electives (BDE)	IUtai
	1	18/19*		8	501.05 (1.5)	zediii (coz)	12	38/39
Chemistry and	2	22		6	3	3	8	42
Biological	3	18			8		6	32
Chemistry	4		22				6	28
	Total	58/59*	22	14	11	3	32	140/14
Sc in Chemistry a	nd Biologia	al Chamistm.	with 2nd Major	in Ducinoss Int	ornational Tra	ding (ITC)		
ategory	ina biologic	ai Chemistry	with 2nd iviajor	in business - ini	ernational ira	iding (11d)	AU	Total A
itege.y	Common (	Core (Universi	ty-level)					101017
		•	unication in an I	nterdisciplinary	World		2	
	CC0003 Et	hics & Civics in	a Multi-Cultura	l World			2	
	ML0004 Ca	areer Design &	Workplace Rea	diness in the V.l	J.C.A World		2	
	CC0015 He	ealth & Wellbe	ing				2	14
		-	ciety, Economy				3	
nterdisciplinary	CC0007 Sc	ience & Techn	ology for Humar	nity			3	
Collaborative	- ·	10 : /0 !!						
Core (ICC)		al Series (Coll	-	2000			2	
			n Across the Scie Data Science and		tence		3	
		roduction to L rofessional Att		Arunda IIItelli	Scrice		5	11
	MLXXXX P	1						
							-	
	XXXXXX Ca	3	3					
							, ,	
	CHEM Cor							
		Foundations of					4	
		Foundations of	-	and all and Blan			4	
	CB1102		o Chemistry, Ch	emical and Bion	nedical Engine	ering	1	
		Calculus for th					4	
		Mathematics	•				2 3/4*	
	PH1011	. —	1012* Physics A				· · · · · · · · · · · · · · · · · · ·	
		Analytical Che	Bioinorganic Ch	lemistry			3	
	CM2011 CM2061	3						
	PS0001	3						
	CM2031	3	58/59					
Major	CM2041	3	30/33					
Requirement	CM2062	3						
	CB2002	1						
	CM3011 <sup>&amp;</sup>	3						
		3						
		CM3041 <sup>&amp;</sup> Physical and Biophysical Chemistry 2 CM3062 Chemistry & Biological Chemistry Laboratory 4						
		Organic React	3					
	CM3021 <sup>&amp;</sup>	3						
	CM3061	3						
			Electives (MPE)					
		Honours Proje	ect 1				10	22
	4 x MPEs						12	
	Business -	International	Trading Compu	Isory Courses				
		Financial Man		,			3	
	2) AB1501		-				3	
	,	3						
2 - 4 8 4 - 1		3) AD1102 Financial Accounting 4) AD2102 Management Accounting						
2nd Major in	5) BE1402	3						
Business -	6) BF2226	3	2.1					
International	7) BF2227	3	31					
Trading (ITG)	8) BF2302	2						
			red & Supply Ch				2	
			sk Management		Markets		2	
	11) BF3214	4 Commodities	Trading	•			2	
	1>						1 - 1	
	12) BF3226	Strategic Ma	nagement in Co	mmodity Marke	t		2	
DE	Any 1 BDE		nagement in Co	mmodity Marke	t		1	1

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

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

	mistry and Biological Chemistry with 2nd	d Major i	n Business -	International Tra	ading (CHITG)		
	Study Plan for AY2025-2026 intake of essional Attachment						
, ,, with ,	ojessional Accuentient						
Year 1 Sem	ester 1	_		Year 1 Sen	mester 2		
Course CM1001	Foundations of Chamistry I	<b>Type</b> C	<u>AU</u> 4	Course CM1002	Foundations of Chemistry II	<b>Type</b> C	AU 4
MH1802	Foundations of Chemistry I Calculus for the Sciences	C	4	CM1804	Mathematics for Chemistry	C	2
CB1102	Introduction to Chemistry, Chemical	С	1	PH1011/	Physics or	С	3
CDIIOZ	and Biomedical Engineering	C	-	1111011/	· <del>-</del>	C	3
CC0001	Inquiry & Communication in an Interdisciplinary World	CC	2	PH1012*	Physics A (For students without 'A' Level Physics)	С	4
CC0015	Health & Wellbeing	СС	2	CC0003	Ethics & Civics in a Multi-Cultural	CC	2
CC0013	Treatm & Wellbellig	CC	2	00000	World	CC	2
AB1501	Marketing	BDE	3	ML0004	Career Design & Workplace Readiness in the V.U.C.A World	CC	2
BE1402	Business Operations & Process	BDE	3	AD1102	Financial Accounting	BDE	3
		#		AB1201	Financial Management	BDE	3
HW0001	Introduction to Academic Communicat	ion"					
			19	-			19/20*
# for studen	nts who have not cleared QET						
V 2 C				V 2 C			
Year 2 Sem Course	ester 1	Туре	AU	Year 2 Sen Course	nester 2	Туре	AU
	Analytical and Bioanalytical	C			Output and Bis superior Chambistan	C	
CM2011	Chemistry	C	3	CM2031	Organic and Bioorganic Chemistry	C	3
CM2021	Inorganic and Bioinorganic Chemistry	С	3	CM2041	Physical and Biophysical Chemistry 1	С	3
CN42061	Chemistry & Biological Chemistry	С	2	CM20C2	Chemistry & Biological Chemistry	С	2
CM2061	Laboratory 1	C	3	CM2062	Laboratory 2	C	3
PS0001	Introduction to Computational Thinking	С	3	CB2002	Introduction to Chemical and Biological Safety	С	1
	Sustainability: Society, Economy &			20000	Introduction to Data Science and	20	
CC0006	Environment	CC	3	PS0002	Artificial Intelligence	PS	3
XXXXXX BF3214	Care, Serve, Learn	CSL BDE	3 2	CC0007	Science & Technology for Humanity	CC BDE	3
DF3214	Commodities Trading	DDE	2	AD2102 BF2227	Management Accounting Commodity Markets	BDE	3 3
					,		
			20				22
Year 3 Sem	ester 1			Year 3 Sen	nester 2		
Course		Туре	AU	Course		Туре	AU
CM3xxx <sup>&amp;</sup>	CHEM-Core	С	3	CM3xxx <sup>&amp;</sup>	CHEM-Core	С	3
CM3xxx <sup>&amp;</sup>	CHEM-Core	С	3	CM3xxx <sup>&amp;</sup>	CHEM-Core	С	3
CM3062	Chemistry & Biological Chemistry	С	3	CM3061	Chemistry & Biological Chemistry	С	3
BF2302	Laboratory 4 International Tax and Trading Law	BDE	2	BF2226	Laboratory 3 Trade Incoterms & Ship Chartering	BDE	3
MLxxxx	Profession Preparation	PS	1	HW0218	Communication Across the Sciences	PS	2
	BDE	BDE	1	V 2.6	tate		
				<u>Year 3 Spe</u> CM4082	Professional Attachment	PS	5
			13				19
Year 4 Sem	ester 1			Year 4 Sen	nester 2		
Course		Туре	AU	Course		Туре	AU
	CHEM MPE 1	MPE	3	CM4080	Honours Project 1	MPE	10
	CHEM MPE 2	MPE	3	BF3212	Trade, Structured & Supply Chain Finance	BDE	2
	CUENA NADE 2	NADE	2	DE2242	Enterprise Risk Management in	DDE	2
	CHEM MPE 3	MPE	3	BF3213	Commodity Markets	BDE	2
	CHEM MPE 4	MPE	3	BF3226	Strategic Management in Commodity	BDE	2
					Market		
			12				16
					Total (AU)		140/141*
					<u> </u>		

This study plan is meant as a guide.
\*Students without 'A' Level Physics will take 'PH1012 Physics A' (4AU).

 $<sup>^{\</sup>it 8}$  CM3xxx refers to CM3011, CM3021, CM3031, CM3041 - These courses are offered in both semesters

## BSc in Chemistry and Biological Chemistry with 2nd Major in Business - International Trading (CHITG)

AY2025 - 2026 Intake onwards with Professional Internship

		Number of Academic Units (AU)									
Programme	Year of	Major Requirement		Interdiscip	linary Collabor	Broadening and					
1 rogramme	Study	Core (C)	Major PE (MPE)	Common Core (CC)	Professional Series (PS)	Care, Serve and Learn (CSL)	Deepening Electives (BDE)	Total			
	1	18/19*		8			12	38/39*			
Chemistry and	2	22		6	3	3	8	42			
Biological	3	18	6		3		11	38			
Chemistry	4		6		10		6	22			
	Total	58/59*	12	14	16	3	37	140/141*			

ategory		AU	Total AL
	Common Core (University-level)		
	CC0001 Inquiry & Communication in an Interdisciplinary World	2	
	CC0003 Ethics & Civics in a Multi-Cultural World	2	
	ML0004 Career Design & Workplace Readiness in the V.U.C.A World	2	
	CC0015 Health & Wellbeing	2	14
	CC0006 Sustainability: Society, Economy & Environment	3	
nterdisciplinary Collaborative	CC0007 Science & Technology for Humanity	3	
Core (ICC)	Professional Series (College-level)		
	HW0218 Communication Across the Sciences	2	
	PS0002 Introduction to Data Science and Artificial Intelligence	3	16
	CM4081 Professional Internship	10	
	MLXXXX Profession Preparation	1	
	XXXXXX 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*	
	CM2021 Inorganic and Bioinorganic Chemistry	3	
	CM2011 Analytical Chemistry	3	
	CM2061 Chemistry & Biological Chemistry Laboratory 1	3	
	PS0001 Introduction to Computational Thinking	3	
Major	CM2031 Organic and Bioorganic Chemistry	3	58/59
Requirement	CM2041 Physical and Biophysical Chemistry 1	3	
•	CM2062 Chemistry & Biological Chemistry Laboratory 2	3	
	CB2002 Introduction to Chemical and Biological Safety	1	
	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
	Business - International Trading Compulsory Courses		
	1) AB1201 Financial Management	3	
	2) AB1501 Marketing	3	
	3) AD1102 Financial Accounting	3	
2nd Major in	4) AD2102 Management Accounting	3	
Business -	5) BE1402 Business Operations & Process	3	
International	6) BF2226 Trade Incoterms & Ship Chartering	3	31
Trading (ITG)	7) BF2227 Commodity Markets	3	
5/	8) BF2302 International Tax & Trading Law	2	
	9) BF3212 Trade, Structured & Supply Chain Finance	2	
	10) BF3213 Enterprise Risk Management in Commodity Markets	2	
	11) BF3214 Commodities Trading 12) BF3226 Strategic Management in Commodity Market	2 2	
	127 51 5225 StrateBic Management in Commonty Market		1
DE	Any 2 BDE	6	6

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

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

with i rojes	sional Internship							
Year 1 Sem	nester 1			Year 1 Semester 2				
Course	Face delices of Characters I	Туре	AU	Course	For adults as of Characters III	Type	AU	
CM1001 MH1802	Foundations of Chemistry I Calculus for the Sciences	C C	4 4	CM1002 CM1804	Foundations of Chemistry II  Mathematics for Chemistry	C C	4 2	
	Introduction to Chemistry, Chemical				·			
CB1102	and Biomedical Engineering	С	1	PH1011/	Physics <u>or</u>	С	3	
CC0001	Inquiry & Communication in an Interdisciplinary World	CC	2	PH1012*	Physics A (For students without 'A' Level Physics)	С	4	
CC0015	Health & Wellbeing	CC	2	CC0003	Ethics & Civics in a Multi-Cultural World	CC	2	
AB1501	Marketing	BDE	3	ML0004	Career Design & Workplace Readiness in the V.U.C.A World	CC	2	
BE1402	<b>Business Operations &amp; Process</b>	BDE	3	AD1102	Financial Accounting	BDE	3	
HW0001	Introduction to Academic Communicati	on#		AB1201	Financial Management	BDE	3	
for studen	nts who have not cleared QET		19				19/20	
Year 2 Sem	aester 1			Voor 2 Son	nector ?			
Course	Course		AU	Year 2 Semester 2 Course			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	
CC0006	Sustainability: Society, Economy & Environment	СС	3	PS0002	Introduction to Data Science and Artificial Intelligence	PS	3	
XXXXXX	Care, Serve, Learn	CSL	3	CC0007	Science & Technology for Humanity	CC	3	
BF3214	Commodities Trading	BDE	2	AD2102 BF2227	Management Accounting Commodity Markets	BDE BDE	3	
			20	- DI 2227	Commounty Markets	BDL	22	
			20				22	
Year 3 Sem	nester 1			Year 3 Sen	nester 2			
Course		Туре	AU	Course		Type	AU	
CM3xxx <sup>&amp;</sup>	CHEM-Core	С	3	CM3xxx <sup>&amp;</sup>	CHEM-Core	С	3	
CM3xxx <sup>&amp;</sup>	CHEM-Core	С	3	CM3xxx <sup>&amp;</sup>	CHEM-Core	С	3	
CM3062	Chemistry & Biological Chemistry Laboratory 4	С	3	CM3061	Chemistry & Biological Chemistry Laboratory 3	С	3	
BF2302	International Tax and Trading Law	BDE	2	BF2226	Trade Incoterms & Ship Chartering	BDE	3	
MLxxxx	Profession Preparation	PS	1	HW0218	Communication Across the Sciences	PS	2	
	BDE 1	BDE	3		CHEM MPE 1	MPE	3	
	BDE 2	BDE	3		CHEM MPE 2	MPE	3	
			18				20	
Year 4 Sem	nester 1			Year 4 Sen	nester 2			
Course		Туре	AU	Course		Туре	AU	
CM4081	Professional Internship	PS	10		CHEM MPE 3 CHEM MPE 4	MPE	3 3	
					Trade, Structured & Supply Chain	MPE		
				BF3212	Finance	BDE	2	
				BF3213	Enterprise Risk Management in Commodity Markets	BDE	2	
				BF3226	Strategic Management in Commodity Market	BDE	2	
			10				12	

This study plan is meant as a guide.

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

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