

B.A. in Mathematics -- Quarter to Semester Translation Table
Quarter Requirements (AY 2017-18)

	Quarter Courses	Semester Course Equivalencies (Course is the same as the quarter course. This can be 1:1, 2:1, many:1, or many:many courses. Anywhere (for any program) which the quarter course was required or listed, this (these) semester course(s) can be used. This information will also be displayed in the course conversion guide. Repeat rules apply.)	Acceptable Semester Course Substitutions (Course is NOT the same as the semester course, but it is acceptable for this particular program requirement area for all students. This information WILL NOT be displayed in the course conversion guide, but will be reflected on the PAWS as a choice for the student. Repeat rules DO NOT apply.)	Acceptable Semester Course Repeats (If there is a grade semester course equivalent, this is the alternative course to allow for grade forgiveness/grade discounting.)	Quarter Units (Correct number of units which are required for each requirement area.)	Semester Units (Number of semester units which will be required for each requirement area.)	Notes	
MATH BA								
Lower Division Requirements	MATH 211, 212, and 213 (each 4 units, quarter)	MATH 210 and 220 (each 4 units, semester)			12	8	If a student has completed only MATH 212 on quarters, then the student should complete MATH 210 and MATH 220. If a student has completed MATH 211 and MATH 212 on quarters, then the student should take MATH 210 and MATH 220. If a student only completed MATH 211, then the student will only earn credit for MATH 211.	
	CSE 201 (4 units, quarter) and MATH 214 (6 units, quarter)		CSE 201		6	4		
	MATH 207	MATH 220			4	3		
	MATH 215, 212, and 311 (each 6 units, quarter)	MATH 210 and 220 (each 4 units, semester)			12	8		
Upper Division Requirements	Required courses	MATH 318	MATH 318		4	3	If a student has completed only MATH 318 on quarters, the student will still need to complete CSE 201. If a student has only completed CSE 201 on quarters, then they have not met the prerequisite for this course but they still need to take additional units to meet the total units required for graduation. If a student has completed only MATH 318 on quarters, then the student should complete MATH 310 and MATH 320. If a student has completed MATH 311 and MATH 312 on quarters, then the student should complete MATH 310 and MATH 320 to complete the sequence. If a student has completed MATH 310, 311, and MATH 312 on quarters, then the student should complete MATH 320 to complete the sequence.	
		MATH 345	MATH 345		4	3		
		MATH 355	MATH 320		4	4		
		MATH 372	MATH 372		4	3		
		MATH 465	MATH 340		4	3		
		MATH 465	MATH 465	MATH 465	4	3		
		MATH 474	MATH 420		4	4		
		MATH 474	MATH 420		4	4		
		MATH 474	MATH 474	MATH 474				
		MATH 480	MATH 480					
Electives	Twelve units of mathematics elective chosen from the following in consultation with advisor	MATH 490	MATH 490		12	9-10	If a student uses MATH 393 (Directed Study) as a grade replacement substitute for MATH 474, then the topic for the directed study course should be connected to the content of MATH 474. If a student has completed MATH 345 on quarters and wants to complete the MATH 346 elective on semesters, then the student should take MATH 460 as a substitute for MATH 346. If a student has not completed MATH 345 on quarters and wants to complete the MATH 345-346 sequence on semesters, then the student can substitute MATH 460 for MATH 345 and can substitute MATH 560 for MATH 346. If a student uses MATH 445 as grade replacement substitute for MATH 370, then the student may not use MATH 445 to count as a semester elective equivalent for MATH 455.	
		MATH 510	MATH 510					
		MATH 511	MATH 511					
		MATH 514	MATH 514					
		MATH 515	MATH 515					
		MATH 517	MATH 517					
		MATH 518	MATH 518					
		MATH 519	MATH 519					
		MATH 526	MATH 526					
		MATH 529	MATH 529					
		MATH 533	MATH 533	MATH 460 (4 units, semester) or MATH 560 (3 units, semester)				
		MATH 544	MATH 544					
		MATH 545	MATH 545					
MATH 546	MATH 546							
MATH 548	MATH 548							
MATH 549	MATH 549							
MATH 550	MATH 550							
MATH 551	MATH 551							
MATH 552	MATH 552							
MATH 553	MATH 553							
MATH 554	MATH 554							
MATH 555	MATH 555							
MATH 556	MATH 556							
MATH 557	MATH 557							
MATH 558	MATH 558							
MATH 559	MATH 559							
MATH 560	MATH 560							
MATH 561	MATH 561							
MATH 562	MATH 562							
MATH 563	MATH 563							
MATH 564	MATH 564							
MATH 565	MATH 565							
MATH 566	MATH 566							
MATH 567	MATH 567							
MATH 568	MATH 568							
MATH 569	MATH 569							
MATH 570	MATH 570							
MATH 571	MATH 571							
MATH 572	MATH 572							
MATH 573	MATH 573							
MATH 574	MATH 574							
MATH 575	MATH 575							
MATH 576	MATH 576							
MATH 577	MATH 577							
MATH 578	MATH 578							
MATH 579	MATH 579							
MATH 580	MATH 580							
MATH 581	MATH 581							
MATH 582	MATH 582							
MATH 583	MATH 583							
MATH 584	MATH 584							
MATH 585	MATH 585							
MATH 586	MATH 586							
MATH 587	MATH 587							
MATH 588	MATH 588							
MATH 589	MATH 589							
MATH 590	MATH 590							
MATH 591	MATH 591							
MATH 592	MATH 592							
MATH 593	MATH 593							
MATH 594	MATH 594							
MATH 595	MATH 595							
MATH 596	MATH 596							
MATH 597	MATH 597							
MATH 598	MATH 598							
MATH 599	MATH 599							
					Total	76	56-57	

B.S. in Mathematics -- Quarter to Semester Translation Table
Quarter Requirements (AY 2017-18)

	Quarter Courses	Semester Course Equivalencies	Acceptable Semester Course Substitutions	Acceptable Semester Course Repeats	Quarter Units	Semester Units	Notes
Core Requirements							
Lower Division Requirements	Required courses MATH 211, 212, and 213 (each 4 units, quarters) CSE 201 (4 units, quarters) and MATH 241 (2 units, quarters) MATH 230	MATH 220 and 222 (each 4 units, semesters) MATH 2320 CSE 2010			12	8	If a student has completed only MATH 211 on quarters, then the student should complete MATH 230Q2 and MATH 2320. If a student has completed MATH 211 and MATH 212 on quarters, then the student should take MATH 213Q2 to complete the sequence. If a student only completes MATH 211, then the student will only earn credit for MATH 211.
Upper Division Requirements	Required courses MATH 241, 242, and 331 (each 4 units, quarters) MATH 329 MATH 345 MATH 355 MATH 372 MATH 465 MATH 545 MATH 555	MATH 241D and 232D (each 4 units, semesters) MATH 3329 MATH 3345 MATH 3365 MATH 3372 MATH 3460 MATH 4600 MATH 5400			12	8	If a student has completed only MATH 241 on quarters, then the student should complete MATH 330Q2S and MATH 2320. If a student has completed MATH 241 and MATH 242 on quarters, then the student should complete MATH 330Q2S to complete the sequence. If a student has completed MATH 241 and MATH 242 on quarters, then the student should complete MATH 2320 to complete the sequence.
Total					62	47	

Concentration (40-56) - Students must choose either the general track or one of the applied concentrations which follow

General Track (MAGT)								
Lower Division Requirements	Required courses	MATH 230 MATH 231 MATH 470 MATH 474 MATH 517 MATH 545 MATH 570 MATH 580 MATH 480 MATH 485 MATH 510 MATH 529 MATH 530 MATH 546 MATH 554 MATH 555 MATH 595D	PHYS 200 MATH 3320 MATH 4455 MATH 4700 MATH 5170 MATH 5585 MATH 3480 MATH 4485 MATH 5510 MATH 5529 MATH 5530 MATH 4600 or MATH 5600 MATH 5300 MATH 5529 MATH 5953			5	4	
Electives (Thirty-six units of mathematics electives selected from the following, with at least eight units chosen from 500-level courses. At least twelve units must be chosen from Group A, and at least twelve units must be chosen from Group B.)	Group A (Applied Mathematics) Group B (Pure Mathematics)	MATH 393 MATH 395 MATH 474 MATH 517 MATH 545 MATH 570 MATH 580 MATH 480 MATH 485 MATH 510 MATH 529 MATH 530 MATH 546 MATH 554 MATH 555 MATH 595D	MATH 393 MATH 4455 MATH 4700 MATH 5170 MATH 5585 MATH 3480 MATH 4485 MATH 5510 MATH 5529 MATH 5530 MATH 4600 or MATH 5600 MATH 5300 MATH 5529 MATH 5953			36	27-28	If a student uses MATH 393 (directed study) as a grade replacement substitute for MATH 474, then the topic for the directed study course should be connected to the content of MATH 474. If a student uses MATH 4455 as grade replacement substitute for MATH 570, then the student may not use MATH 4455 to count as a semester elective equivalent for MATH 4455. If a student has completed MATH 545 on quarters and wants to complete the MATH 546 elective on semesters, then the student should take MATH 4600 as a substitute for MATH 546. If a student has not completed MATH 545 on quarters and wants to complete the MATH 545-546 sequence on semesters, then the student can substitute MATH 4600 for MATH 545 and can substitute MATH 5600 for MATH 546.
Total					41	31-32		

Concentration in Biology (MABC)								
Lower Division Requirements	Required courses	BIOC 200, 201, and 202 (each 5 units, quarters) CHEM 211 CHEM 218 BIOC 300 MATH 470 MATH 545 MATH 570	BIO 2050 and 2020 (each 5 units, semesters) CHEM 2100 CHEM 2200 BIOC 3100 MATH 4270 MATH 5585 MATH 4360			15	10	
Upper Division Requirements	Required courses	BIOC 321 BIOC 423 BIOC 460 BIOC 522 BIOC 574 BIOC 575 MATH 435 MATH 474 MATH 485 MATH 510 MATH 529 MATH 531 MATH 546 MATH 554 MATH 555 MATH 570 MATH 595D	BIOC 3700 (4 units) BIOC 3300 (4 units) BIOC 3800 (4 units) BIOC 3720 (4 units) BIOC 5220 (4 units) BIOC 5370 (4 units) MATH 3300 MATH 4455 MATH 3480 MATH 4485 MATH 5510 MATH 5529 MATH 5310 MATH 5300 MATH 5500 MATH 5170 MATH 4455 MATH 3953			8-10	8-9	If a student uses MATH 3953 (directed study) as a grade replacement substitute for MATH 474, then the topic for the directed study course should be connected to the content of MATH 474. If a student has completed MATH 545 on quarters and wants to complete the MATH 546 elective on semesters, then the student should take MATH 4600 as a substitute for MATH 546. If a student has not completed MATH 545 on quarters and wants to complete the MATH 545-546 sequence on semesters, then the student can substitute MATH 4600 for MATH 545 and can substitute MATH 5600 for MATH 546. If a student uses MATH 4455 as grade replacement substitute for MATH 570, then the student may not use MATH 4455 to count as a semester elective equivalent for MATH 4455.
Electives	Four units chosen from	MATH 393 MATH 395 MATH 474 MATH 480 MATH 485 MATH 510 MATH 529 MATH 531 MATH 546 MATH 554 MATH 555 MATH 570 MATH 595D	MATH 393 MATH 4455 MATH 3480 MATH 4485 MATH 5510 MATH 5529 MATH 5310 MATH 5300 MATH 5500 MATH 5170 MATH 4455 MATH 3953			4	3	
Total					58-59	45-46		

Concentration in Computer Science (MACS)								
Lower Division Requirements	Required courses	CSE 200 and CSE 330 (each 4 units, quarters) CSE 240 CSE 481 CSE 480 CSE 501 CSE 517 CSE 513 CSE 515 CSE 420 CSE 524 CSE 530 CSE 550 CSE 551	CSE 2010 CSE 4200 CSE 4310 CSE 5000 CSE 5010 CSE 5170 CSE 5150 CSE 5200 CSE 5305 CSE 5500 CSE 5510 MATH 3300 MATH 4455 MATH 4270 MATH 3480 MATH 4485 MATH 510 MATH 529 MATH 5310 MATH 5300 MATH 5500 MATH 5170 MATH 4455 MATH 3953			8	4	If a student has only completed CSE 202 on quarters, then the student must complete CSE 2020.
Upper Division Requirements	Required courses	CSE 490 CSE 491 CSE 490 CSE 501 CSE 517 CSE 513 CSE 515 CSE 420 CSE 524 CSE 530 CSE 550 CSE 551	CSE 3950 CSE 4200 CSE 4310 CSE 5000 CSE 5010 CSE 5170 CSE 5150 CSE 5200 CSE 4900			4	3	This topic for the independent study course should be on a programming language related topic.
Electives	Sixteen units of mathematics electives selected from the following with at least eight units chosen from 500-level courses	MATH 393 MATH 435 MATH 474 MATH 480 MATH 485 MATH 510 MATH 529 MATH 531 MATH 546 MATH 554 MATH 555 MATH 570 MATH 576 MATH 595D	MATH 393 MATH 4455 MATH 3480 MATH 4485 MATH 5510 MATH 5529 MATH 5310 MATH 5300 MATH 5500 MATH 5170 MATH 4455 MATH 3953			16	12-13	If a student uses MATH 3953 (directed study) as a grade replacement substitute for MATH 474, then the topic for the directed study course should be connected to the content of MATH 474. If a student has completed MATH 545 on quarters and wants to complete the MATH 546 elective on semesters, then the student should take MATH 4600 as a substitute for MATH 546. If a student has not completed MATH 545 on quarters and wants to complete the MATH 545-546 sequence on semesters, then the student can substitute MATH 4600 for MATH 545 and can substitute MATH 5600 for MATH 546. If a student uses MATH 4455 as grade replacement substitute for MATH 570, then the student may not use MATH 4455 to count as a semester elective equivalent for MATH 4455.
Total					40	28-29		

Concentration in Economics (MAEC)								
Lower Division Requirements	Required courses	ECON 200 ECON 201 MATH 320 MATH 545 MATH 570	ECON 220S ECON 220S MATH 3330 MATH 5585 MATH 4360			4	3	
Upper Division Requirements	Required courses	ECON 300 ECON 360 ECON 410 ECON 430 ECON 435 ECON 475 ECON 480 ECON 490 MATH 435 MATH 474 MATH 480 MATH 485 MATH 510 MATH 529 MATH 531 MATH 546 MATH 554 MATH 555 MATH 570 MATH 576 MATH 595D	ECON 4200 (3 units) ECON 4300 (2 units) ECON 3100 (3 units) ECON 3400 (3 units) ECON 3100 (3 units) ECON 3700 (3 units) ECON 3710 (3 units) ECON 4400 (3 units) ECON 4400 (3 units) MATH 4455 MATH 4270 MATH 3480 MATH 4485 MATH 5510 MATH 5529 MATH 5310 MATH 5300 MATH 5500 MATH 5170 MATH 4455 MATH 3953			16	12	
Electives	Four units chosen from	MATH 393 MATH 435 MATH 474 MATH 480 MATH 485 MATH 510 MATH 529 MATH 531 MATH 546 MATH 554 MATH 555 MATH 570 MATH 576 MATH 595D	MATH 393 MATH 4455 MATH 3480 MATH 4485 MATH 5510 MATH 5529 MATH 5310 MATH 5300 MATH 5500 MATH 5170 MATH 4455 MATH 3953			4	3-4	If a student has completed MATH 545 on quarters and wants to complete the MATH 546 elective on semesters, then the student should take MATH 4600 as a substitute for MATH 546. If a student has not completed MATH 545 on quarters and wants to complete the MATH 545-546 sequence on semesters, then the student can substitute MATH 4600 for MATH 545 and can substitute MATH 5600 for MATH 546. If a student uses MATH 4455 as grade replacement substitute for MATH 570, then the student may not use MATH 4455 to count as a semester elective equivalent for MATH 4455.
Total					40	30-31		

Concentration in Geographic Information Systems (MAGI)								
Lower Division Requirements	Required courses	GEOG 103 GEOG 104 GEOG 202 GEOG 308 GEOG 400 MATH 470	GEOG 1030 GEOG 2250 GEOG 3210 GEOG 4800 MATH 4270			5	3	
Upper Division Requirements	Required courses	GEOG 506 and 406 (4 units each, quarters) GEOG 570S-E MATH 320 MATH 435 MATH 474 MATH 480 MATH 485 MATH 510 MATH 529 MATH 531 MATH 546 MATH 554 MATH 555 MATH 570 MATH 576 MATH 595D	GEOG 4800 (4 units, semesters) GEOG 5723 (3 units, semesters) MATH 3300 MATH 4455 MATH 3953 MATH 3480 MATH 4485 MATH 5510 MATH 5529 MATH 5310 MATH 5300 MATH 5500 MATH 5170 MATH 4455 MATH 3953			8	3-4	If a student uses MATH 3953 (directed study) as a grade replacement substitute for MATH 474, then the topic for the directed study course should be connected to the content of MATH 474.
Electives	Twelve units selected from the following with at least eight units chosen from 500-level	MATH 393 MATH 435 MATH 474 MATH 480 MATH 485 MATH 510 MATH 529 MATH 531 MATH 546 MATH 554 MATH 555 MATH 570 MATH 576 MATH 595D	MATH 393 MATH 4455 MATH 3480 MATH 4485 MATH 5510 MATH 5529 MATH 5310 MATH 5300 MATH 5500 MATH 5170 MATH 4455 MATH 3953			12	9-10	If a student has completed MATH 545 on quarters and wants to complete the MATH 546 elective on semesters, then the student should take MATH 4600 as a substitute for MATH 546. If a student has not completed MATH 545 on quarters and wants to complete the MATH 545-546 sequence on semesters, then the student can substitute MATH 4600 for MATH 545 and can substitute MATH 5600 for MATH 546. If a student uses MATH 4455 as grade replacement substitute for MATH 570, then the student may not use MATH 4455 to count as a semester elective equivalent for MATH 4455.
Total					48	33-35		

Concentration in Physics (MAPC)								
Lower Division Requirements	Required courses	PHYS 221, 222, and 222 (each 5 units, quarters) PHYS 224 and 225 (each 3 units, quarters)	PHYS 2000 (4 units), 2006 (1 unit), 2510 (4 units), and 2510L (1 unit) PHYS 2700			15	10	
Total					6	3		

Upper Division Requirement		Required Course							
Electives	Twelve units chosen from	PHYS 306	PHYS 320			12	6-12	PHYS 307, PHYS 461, PHYS 463, PHYS 480A, PHYS 480B, and PHYS 573 have been deleted. Consultation with the PHYS department is recommended for any issues related to repeating these courses for grade forgiveness.	
		PHYS 307	PHYS 320						
		PHYS 313	PHYS 340						
		PHYS 314	PHYS 440						
		PHYS 315	PHYS 540						
		PHYS 324	PHYS 350						
		PHYS 329	ASTR 330						
		PHYS 321	PHYS 470						
		PHYS 322	PHYS 520						
		PHYS 360	PHYS 400						
		PHYS 450	PHYS 550						
		PHYS 461							
		PHYS 463							
		PHYS 473	PHYS 510						
		PHYS 480A							
		PHYS 480B							
		PHYS 480A	PHYS 4851						
		PHYS 573							
		MATH 320	MATH 330						
		MATH 345	MATH 445						
		MATH 470	MATH 470						
		MATH 474		MATH 3953					
		MATH 480	MATH 3480						
		MATH 485	MATH 4485						
		MATH 510	MATH 5510						
MATH 529	MATH 5539								
MATH 531	MATH 5310								
MATH 546		MATH 4600 or MATH 5600							
MATH 554	MATH 5360								
MATH 555	MATH 5550								
MATH 557	MATH 5170								
MATH 555	MATH 5565								
MATH 570		MATH 4455							
MATH 576		MATH 4360							
MATH 590A	MATH 5503								
Total				48	32-38				

B.A. in Mathematics - Teaching Track -- Quarter to Semester Translation Table
Quarter Requirements (AY 2017-18)

		Semester Course Equivalencies <small>(Course is the same as the quarter course. This can be 1:1; 2:many; many:1; or many:many courses. Anywhere (for any program) which the quarter course was required or listed, this (these) semester course(s) can be used. This information will also be displayed in the course conversion guide. Repeat rules apply.)</small>	Acceptable Semester Course Substitutions <small>(Course is NOT the same as this semester course, but it is acceptable for this particular program requirement area for all students. This information WILL NOT be displayed in the course conversion guide, but will be reflected on the PAWS as a choice for the student. Repeat rules DO NOT apply.)</small>	Acceptable Semester Course Repeats <small>(If there is a 2+ semester course equivalence, this is the alternative course to allow for grade forgiveness/grade discounting.)</small>	Quarter Units <small>(Current number of units which are required for each requirement area.)</small>	Semester Units <small>(Number of semester units which will be required for each requirement area.)</small>	Notes	
MATT								
Lower Division Requirements	Required courses	MATH 211, 212, and 213 (each 4 units, quarters)	MATH 2210 and 2220 (each 4 units, semesters)		12	8	If a student has completed only MATH 211 on quarters, then the student should complete MATH 2110Q2S and MATH 2220. If a student has completed MATH 211 and MATH 212 on quarters, then the student should take MATH 2110Q2S to complete the sequence. If a student only completes MATH 212S, then the student will only earn credit for MATH 211.	
		MATH 241		CSE 1100 or CSE 1250	2	3		
		MATH 199 (3 units, quarters) and MATH 199 (4 units, quarters)	MATH 2900 (4 units, semesters)		7	4		If a student has only completed MATH 199 on quarters, then the student will need to take MATH 2900 to complete the sequence. If a student has only completed MATH 299 on quarters, then the student should take MATH 199Q2S.
		MATH 201, 202, and 311 (each 4 units, quarters)	MATH 2310 and 2320 (each 4 units, semesters)		12	8		If a student has completed only MATH 201 on quarters, then the student should complete MATH 2310Q2S and MATH 2320. If a student has completed MATH 201 and MATH 202 on quarters, then the student should complete MATH 2310Q2S to complete the sequence. If a student has completed MATH 201, 202, and MATH 311 on quarters, then the student should complete MATH 2320 to complete the sequence.
Upper Division Requirements	Required courses	MATH 329	MATH 3329		4	3		
		MATH 345	MATH 3345	MATH 3100	4	3		
		MATH 355		MATH 3100	4	4		
		MATH 372	MATH 3372		4	3		
		MATH 465	MATH 3460		4	3		
		MATH 480	MATH 3480		4	3		
		MATH 599 (3 units, quarters) and MATH 499 (4 units, quarters)	MATH 4900 (4 units, semesters)		6	4		If a student has completed only MATH 599 on quarters, then the student will need to take MATH 4900 to complete the sequence.
		MATH 529	MATH 5529	MATH 4600	4	3		
		MATH 545		MATH 4600	4	4		
		MATH 553	MATH 4300		4	4		
MATH 565	MATH 5565		4	3				
MATH 599	MATH 5600		2	3				
Electives	Eight units chosen from the following in consultation with an advisor with at least 4 units chosen at the 400-level and above	MATH 270	MATH 2270		8	6-7	If a student uses MATH 395 (directed study) as a grade replacement substitute for MATH 474, then the topic for the directed study course should be connected to the content of MATH 474. If a student has completed MATH 545 on quarters and wants to complete the MATH 545 elective on semesters, then the student should take MATH 4600 as a substitute for MATH 545. If a student has not completed MATH 545 on quarters and wants to complete the MATH 545-546 sequence on semesters, then the student can substitute MATH 4600 for MATH 545 and can substitute MATH 5600 for MATH 546. If a student is using MATH 4455 as a grade replacement substitute for MATH 570, then the student may not use MATH 4455 to count as a semester elective equivalent for MATH 435.	
		MATH 320	MATH 3320					
		MATH 455	MATH 3455					
		MATH 470	MATH 4710					
		MATH 474		MATH 395 (
		MATH 485	MATH 4485					
		MATH 510	MATH 5110					
		MATH 531	MATH 5310	MATH 4600 or MATH 5600				
		MATH 546	MATH 5306					
		MATH 555	MATH 5550					
		MATH 557	MATH 5570					
		MATH 570		MATH 4455				
		MATH 576		MATH 5660				
		MATH 595D	MATH 5951					
		Total						89

Mathematics Minor – Quarter to Semester Translation Table
Quarter Requirements (AY 2017-18)

Quarter Courses	Semester Course Equivalencies (Course is the same as the quarter course. This can be 1:1, 1:many, many:1, or many:many courses. Anywhere (for any program) which the quarter course was required or listed, this (these) semester course(s) can be used. This information will also be displayed in the course conversion guide. Repeat rules apply.)	Acceptable Semester Course Substitutions (Course is NOT the same as the semester course, but it is acceptable for this particular program requirement area for all students. This information WILL NOT be displayed in the course conversion guide, but will be reflected on the PAWS as a choice for the student. Repeat rules DO NOT apply.)	Repeats (If there is no semester course equivalency, this is the alternative course to allow for grade forgiveness/grade discounting.)	Quarter Units (Current number of units which are required for each requirement area.)	Semester Units (Number of semester units which will be required for each requirement area.)	Notes
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MATH-MIN

Lower Division Requirements	Required courses	CSE 301 MATH 241	CSE 2010 MATH 211, 212, and 213 (each 4 units, quarters)	MATH 2210 and 2220 (each 4 units, semesters)	CSE 1100 or CSE 1200 MATH 2310 MATH 2320	2	3-4	If a student has completed only MATH 211 on quarters, then the student should complete MATH 212/2025 and MATH 220. If a student has completed MATH 211 and MATH 212 on quarters, then the student should take MATH 220/2025 to complete the sequence. If a student only completes MATH 220, then the student will only earn credit for MATH 211.
Upper Division Requirements	Required course	MATH 331		MATH 3320-5953 (3 units)	MATH 3320	4	3-4	Any upper division mathematics course (ranging from 3320 to 5953) applicable to the math major with the exception of MATH 2900, MATH 4900, and MATH 5900, selected in consultation with a math faculty advisor.
	Four units chosen from	MATH 345 MATH 355		MATH 3100		4	4	
	Four units chosen from upper division elective course work in mathematics courses applicable to the major	MATH 300-599	MATH 3320-5953			4	3-4	Any upper division mathematics course (ranging from 3320 to 5953) applicable to the math major with the exception of MATH 2900, MATH 4900, and MATH 5900, selected in consultation with a math faculty advisor.
Total						34	29 to 32	

Applied Mathematics Minor-- Quarter to Semester Translation Table
 Quarter Requirements (AY 2017-18)

Quarter Courses	Semester Course Equivalencies (Course is the same as the quarter course. This can be 1:1, 1:many, many:1, or many:many courses. Anywhere (for any program) which the quarter course was required or listed, this (these) semester course(s) can be used. This information will also be displayed in the course conversion guide. Repeat rules apply.)	Acceptable Semester Course Substitutions (Course is NOT the same as the semester course, but it is acceptable for this particular program requirement area for all students. This information WILL NOT be displayed in the course conversion guide, but will be reflected on the PAWS as a choice for the student. Repeat rules DO NOT apply.)	Acceptable Semester Course Repeats (If there is 05 semester course equivalency, this is the alternative course to allow for grade forgiveness/grade discounting.)	Quarter Units (Current number of units which are required for each requirement area.)	Semester Units (Number of semester units which will be required for each requirement area.)	Notes
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APMA-MIN

Minor Requirements	Required courses	MATH 211, 212, and 213 (each 4 units, quarters)	MATH 220 and 220 (each 4 units, semesters)		12	8	If a student has completed only MATH 211 on quarters, then the student should complete MATH 212/220S and MATH 220. If a student has completed MATH 211 and MATH 212 on quarters, then the student should take MATH 213/220S to complete the sequence. If a student only completes MATH 220S, then the student will only earn credit for MATH 211.
		MATH 241		CSE 1300 or CSE 1350	2	3	
		MATH 241		MATH 2100	4	4	
		MATH 252		MATH 2100	4	4	
Choose One of the Following Groups	Group A	MATH 270	MATH 2270		12-16	9-12	The semester prerequisite to MATH 5565 is MATH 2265, which is not a requirement for the minor in applied mathematics. Students should consult with faculty prior to registering for MATH 5565.
		MATH 365		MATH 3100			
		MATH 470		MATH 4270			
	Group B	MATH 270	MATH 2270				
		MATH 365		MATH 3100			
		MATH 470		MATH 4270			
	Group C	CSE 203	CSE 200S	MATH 3320			
		MATH 474		MATH 4270 or MATH 4320 or PHYS 5100			
		MATH 270	MATH 3372				
	Group D	MATH 465	MATH 3460				
		MATH 555	MATH 5265				
		MATH 331	MATH 2265 or MATH 3320				
	Group E	MATH 372	MATH 3372				
		MATH 465	MATH 3460				
		MATH 576	MATH 4270 or MATH 4320 or PHYS 5100				
Total				14-18	28-31		

Actuarial Science Certificate -- Quarter to Semester Translation Table
Quarter Requirements (AY 2017-18)

Quarter Courses	Semester Course Equivalencies (Course is the same as the quarter course. This can be 1:1, 1:many, many:1, or many:many courses. Anywhere (for any program) which the quarter course was required or listed, this (these) semester course(s) can be used. This information will also be displayed in the course conversion guide. Repeat rules apply.)	Acceptable Semester Course Substitutions (Course is NOT the same as the semester course, but it is acceptable for this particular program requirement area for all students. This information WILL NOT be displayed in the course conversion guide, but will be reflected on the PAWS as a choice for the student. Repeat rules DO NOT apply.)	Acceptable Semester Course Repeats (If there is a semester course equivalency, this is the alternative course to allow for grade forgiveness/grade discounting.)	Quarter Units (Current number of units which are required for each requirement area.)	Semester Units (Number of semester units which will be required for each requirement area.)	Notes
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Actuarial Science

Certificate Requirements	Lower-division required courses	ECON 200	ECON 201		4	3	If a student has completed only MATH 211 on quarters, then the student should complete MATH 212/2025 and MATH 2220. If a student has completed MATH 211 and MATH 212 on quarters, then the student should take MATH 220/220 to complete the sequence. If a student only completes MATH 2220, then the student will only earn credit for MATH 211.
		ECON 202	ECON 2202		4	3	
	MATH 211, 212, and 213 (each 4 units, quarters)	MATH 2210 and 2220 (each 4 units, semesters)			12	8	
	MATH 241	CSE 1100 or CSE 1250			2	3-4	
	MATH 243	MATH 2810			4	4	
	MATH 252	MATH 2320			4	4	
	ECON 300	ECON 4200			4	3	
	ECON 305	ECON 4300			4	3	
	MATH 320	MATH 3320			4	3	
	MATH 372	MATH 3372			4	3	
	MATH 465	MATH 3460			4	3	
				Total	50	40-41	