

Applied & Computational Mathematics Major-BS (Matriculated at UMD in 2019)

Freshman Year					
First Semester			Second Semester		
MTH151	Calculus I (US 1D)	4	MTH152	Calculus II	4
MTH181	Discrete Mathematics I	3	MTH182	Discrete Mathematics II	3
PHY113	Classical Physics I	4	PHY114	Classical Physics II (US 2A)	4
CAS101	Introduction to the Arts & Sciences (US 1E)	1	ENL102	Critical Reading & Writing II (US 1B)	3
ENL101	Critical Reading & Writing I (US 1A)	3			
		15			14
					29
Sophomore Year					
First Semester			Second Semester		
MTH211	Calculus III	4	MTH212	Differential Equations	3
MTH221	Linear Algebra	3	MTH280	Introduction to Scientific Computation	3
	US 2B elective (PHY115** recommended)	3		Free elective	3
	US 3B elective	3		US 3A elective	3
	US 4A elective	3		US 4B elective	3
		16			15
					60
Junior Year					
First Semester			Second Semester		
MTH361	Numerical Analysis I (US 1C)	3	MTH362	Numerical Analysis II	3
*	Mathematics elective	3	MTH473	Numerical Linear Algebra	3
*	Mathematics elective	3	**	Science elective	3
**	Science elective	3		US 4C elective	3
	Free elective	3		Free elective	3
		15			15
					90
Senior Year					
First Semester			Second Semester		
MTH472	Numerical Methods for PDEs	3	MTH475	Advanced Numerical Methods for PDEs (US 5A)	3
MTH440	Mathematical and Computational Consulting (US 5B)	3	*	Mathematics elective	3
***	Technical elective	3		Free elective	3
	Free elective	3		Free elective	3
	Free elective	3		Free elective	3
		15			15
					120

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Required Mathematics Cores:	
MTH151 _____	MTH152 _____ MTH181 _____ MTH182 _____ MTH211 _____ MTH212 _____
MTH221 _____	MTH280 _____ MTH361 _____ MTH362 _____ MTH472 _____ MTH473 _____
US courses: MTH440 (US 5B) _____ MTH475 (US 5A) _____	
Required Physics Courses: PHY113 _____ PHY114 _____	
Plus:	
* 9 units of Mathematics electives , which include all upper level mathematics classes. Recommended courses are Optimization (MTH474), HPC (MTH420), PDEs (MTH471), Probability (MTH331) and Mathematical Statistics (MTH332), Advanced Calculus I and II (MTH311 & MTH312), and Complex Analysis (MTH421), Upper Level courses in Mathematics and Selected Topics in Mathematics (MTH499).	
** 6 units of Science electives must be in addition to PHY113 & 114, and must be at the level taken by majors. CHM155/156, BIO121/122, PHY115/213, MLS115/121 are acceptable science electives.	
*** 3 units of Technical electives , which may include any major level class in Computer science, Physics, or Engineering (CIS 115, CIS 215, CIS180, or CIS261 can be used).	
Students must take 6 units of literature (US 3A) and 18 units of Humanities and Social Science (at least 6 of each and no more than 6 in one department).	
At the discretion of the Mathematics Department Chair, the requirements 5A & 5B in the mathematics department can be substituted with courses fulfilling 5A & 5B in other disciplines.	
Students must earn a grade of C- or higher in each mathematics course which is counted toward the completion of mathematics requirements of the major.	
Students must complete the total of 30 units at the 300 level or higher Mathematics electives, Technical electives, and Science & Engineering electives count here, too.	
Students must satisfy the University Studies requirements. Some Science, Literature, Humanities, and Social Sciences courses also satisfy University Studies requirements. Details are at the University Studies Site : http://www.umassd.edu/universitystudies/	
Comment:	