Mathematics Major: Applied Mathematics Specialization

Freshman Year				Units
Fall:	MAT	099	Orientation for Math/Stat Majors	0
	MAT	127	Calculus A	1
	CSC	120	Foundations of Computational Thinking	
			or MAT 203 Introduction to Mathematical Computing [1]	1
	FYS	16x	First Year Seminar	1
	------	----	Second Language [2]	1
				4 total
Spring:	MAT	128	Calculus B	1
	MAT	200	Discrete Mathematics	1
	------	----	College Core	1
	------	----	Second Language [2]	1
				4 total

Sophomore Year				
Fall:	MAT	229	Multivariable Calculus	1
	MAT	205	Linear Algebra	1
	MAT/STA		Second course of computer science	1
			/CSC requirement [1] or College Core	
	------	----	Second Language [2]	1
				4 total
Spring:	MAT	326	Differential Equations	1
	------	----	Science (College Core) [3]	1
	STA	215	Statistical Inference	1
	MAT	275	Sophomore Seminar	.5
	------	----	Elective	.5
				4 total

Junior Year				
Fall:	-------	----	MAT/STA Option [4]	1
	-------	----	MAT/STA Option [4]	1
	-------	----	College Core	2
				4 total
Spring:	MAT	310	Real Analysis	1
	-------	----	MAT/STA Option [4]	1
	------	----	College Core	1
	-------	----	College Core	1
				4 total

Senior Year				
Fall:	------	----	400 level MAT/STA Option [4]	1

		MAT/STA Option[4]	1
------	----	MAT/STA Option[4]	1
------	----	College Core	<u>1</u>
			3 total

Spring:	------	----	MAT/STA Option[4]	1
	MAT	498	Applied Mathematics Capstone[5]	1
	------	----	Elective	<u>1</u>
				3 total

TOTAL REQUIRED FOR GRADUATION: **30 UNITS**

Note: The official major requirements, including retention and graduation grade requirements, can be found in the Undergraduate Bulletin and on the department website.

[1] Students must take:

> (a) CSC 120 (Foundations of Computational Thinking) or MAT 203 (Introduction to Mathematical Computing)
> **and**
> (b) CSC 230 (Computer Science II) or MAT 341 (Computational Mathematics).

Students are highly encouraged to take the Computer Science correlate as early as possible in their academic career. Note that a student who takes MAT 341 for the computer requirement **may not** also count this as 1 of the 6 MAT/STA Options.

[2] If continuing in the same language as studied in high school, you must complete the language requirement at the 103 level or higher. Also, if you took three or more years of a language in high school and continue with this language and you are placed at the 101 level, then the 101 level course will NOT count towards the 32 units required for graduation.

[3] See department website for list of courses:

https://mathstat.tcnj.edu/information-for-students/mathematics-major-science-requirements/

[4] Applied Math Specialization Majors are required to take 6 math/stat options. These courses need to be chosen to meet the following requirements:

- Three Applied Math courses (see PAWS for the list)

- At least one course must be a 400-level Applied Math course (must fill 1 of the 3 Applied Math courses)

- *At most two* of the six courses can be STA 300/400-level courses.

- Non MAT/STA courses *do not count* as Applied Math courses.

- Students can take at most one course unit of independent study, guided study, or independent research as one of the six course units. Regardless of the topic, this independent work course does not count as an applied math options course. Please note that when taking an independent study, guided study, or independent research course, a student's course load should not be more than 4.5 course units. Independent study, guided study, or independent research courses may not be taken in order to improve a grade, or to replace a course that a student failed to sign up for.

[5] In their senior year, majors must complete the capstone experience. The capstone experience is concerned with oral and written communication of in-depth mathematics and serves as a summative experience for the Mathematics major.