COLLEGE OF SCIENCE
MATHEMATICS
VIRGINIA TECH

Applied Computational Mathematics Degree Option

SAMPLE PROGRAM OF STUDY

Total of 120 credit hours required for graduation

There is considerable flexibility in designing a program of study. The example given below is not likely to fit every situation and is provided for information as you develop your own plan with your academic advisor.

Fall Semester Freshman		Credits
MATH 1225	Calculus of a Single Variable Pathway 5f	4
MATH 1004	Discovering Mathematics I (fall only)	1
MATH 1454[1]	Introduction to Math Programming (fall only)	3
ENGL 1105	First-Year Writing, Pathway 1f	3
	Pathway 2	3
	Pathway 3	3
		17

Spring Semester Freshman		Credits
MATH 1226	Calculus of a Single Variable Pathway 5f	4
MATH 1044	Discovering Mathematics II (spring only)	2
ENGL 1106	First-Year Writing, Pathway 1f	3
	Pathway 2	3
	Pathway 7[2]	3
		15

Fall Semester Sophomore		Credits
MATH 2114	Introduction to Linear Algebra	3
MATH 2204	Intro Multivariable Calculus	3
	Pathway 3	3
	Pathway 4	3
	Free Elective	3
		15

Spring Semester Sophomore		Credits
MATH 2214	Intro to Differential Equations Pathway 5a	3
MATH 3034	Intro to Proofs (Prereq: C in MATH 2114)	3
	Pathway 4	3
	Pathway 6a	3
	Pathway 6d	3
	Submit Applications Area Course Plan	**15**

Fall Semester Junior		Credits
MATH 3144	Linear Algebra I	3
MATH 3214	Calculus of Several Variables	3
MATH 4445	Intro to Numerical Analysis	3
	Applications Area Course	3
	Pathway 1a	3
		15

Spring Semester Junior		Credits
MATH 3224	Advanced Calculus	3
MATH 4446	Intro to Numerical Analysis	3
	Applications Area Course	3
	Free Elective	3
	Free Elective	3
		15

Fall Semester Senior		Credits
MATH 4425	Fourier Series PDE	3
MATH 4414[3]	Issues in Scientific Computing (fall only)	3
MATH	MATH Elective Course[4]	3
	Applications Area Course	3
	Free Elective	3
		15

Spring Semester Senior		Credits
MATH 4426[5]	Fourier Series PDE	3
MATH 4454[3]	Applied Mathematical Modeling (spring only)	3
MATH	MATH Elective Course[4]	3
	Applications Area Course	3
	Free Elective	3
		15

[1] MATH 1225 is a corequisite for MATH 1454. Discuss choice of programming course with academic advisor.

[2] In Pathways, some courses can be used for Pathway Concept 7 plus one other Concept, but no other double-counting is permitted.

[3] Students are required to take only **one of MATH 4414 or MATH 4454**. MATH 4414 is usually taught in the fall while MATH 4454 is usually taught in the spring. A prerequisite for MATH 4414 is CS 2114 or MATH 3054. MATH 1454 is an allowable prerequisite substitution for MATH 4414. Any programming course will suffice as the programming prerequisite for MATH 4454. Consult the Timetable of Classes for other MATH 4414 and MATH 4454 prerequisites.

[4] Must be chosen from Mathematics courses numbered between 4044-4454 with the exceptions (a) MATH 3124 can be used (b) no more than three hours from MATH 4044 and MATH 4334 can be used

[5] CMDA 4604 may be taken instead of MATH 4426. Consult the Timetable of Classes for prerequisites.