

B.S in Mathematics - Applied Math Emphasis 2022-23

	Course	Title	Cr.	When	Prerequisites
Required GE Courses	Quantitative Lit.	Math 1210 - Calculus I *	4	F/S/SU	Math 1050 & 1060 or ACT 26+
	Ph. Sci. Option 1	CHEM 1210/15, Chem 1/Lab	5	F/S/SU	Math 1050, 1210, or ACT 26+
	Ph. Sci. Option 2	PHYS 2210/15, Physics 1/Lab	5	F/S/SU	Math 1210
Other GE courses are required to graduate with a Bachelor's Degree from SUU. The above-listed courses count for both GE and Major Requirements					
Math Common Core	CS 1400	Fundamentals of Programming	3	F/S	CSIS 1030 or MATH 1050 (within 4 Years)
	CS 1410	Object Oriented Programming	3	F/S/SU	CS 1400
	MATH 1220	Calculus II	4	F/S/SU	MATH 1210
	MATH 2210	Calculus III	4	F/S/SU	MATH 1220
	MATH 2270	Linear Algebra	3	F/S/SU	MATH 1220
	MATH 3120	Transition to Advanced Math	3	F/S	MATH 1220 & 2270
	MATH 3250	Complex Variables	3	S-ODD	MATH 2210
	MATH 3600	Numerical Analysis	3	S-EVEN	MATH 2250 or 2280 and programming knowledge
	MATH 3700	Probability and Statistics	4	F/S/SU	MATH 1220
MATH 4400	Advanced Calculus I	3	F	MATH 2210 & 3120	
Select 1 Diff. Eq. Option	MATH 2250	Lin. Alg. and Diff. Equations	4	F/S	MATH 1220
	MATH 2280	Differential Equations	3	S	MATH 1220 & 2270 (2270 concurrent)
Support Courses (Choose 1)	CHEM 1220/25	Principles of Chemistry II/Lab	4/1	F/S/SU	CHEM 1210/15
	PHYS 2220/25	Physics II/Lab	4/1	F/S/SU	PHYS 2210/15 & MATH 1220
Emphasis Elective Credits (12 Credits Required)	CHEM 3610/15	Physical Chemistry I/Lab	3/1	F	CHEM 1220/25 & Math 1220
	CHEM 3620/25	Physical Chemistry II/Lab	3/1	S	CHEM 1220/25 & Math 1220
	CS 2420	Intro to Algs. & Data Structures	3	F/S/SU	CS 1410
	CS 3550	Found. of Computation Theory	3	S	CS 2300 or MATH 3120
	EE 2250/55	Electric Circuits/Lab	3/1	F/S/SU	MATH 2250**, PHYS 2220/25, ENGL 2010
	MATH 3190	Fundamentals of Data Science	3	S	MATH 2140, (MATH 2170 or 2270), ANLY 4100, (CS1400)
	MATH 3770	Mathematical Modeling	3	S-ODD	MATH 3700
	MATH 3800	Partial Differential Equations	3	F-ODD	MATH 2210 & MATH 2250 or 2280
	MATH 4220	Abstract Algebra I	3	F	MATH 3120
	MATH 4410	Advanced Calculus II	3	S-ODD	MATH 4400
	ME 3200	Thermodynamics	3	S	PHYS 2220
	ME 3300/05	Fluid Mechanics/Lab	3/1	S/SU	MATH 1220 & PHYS 2210
	ME 4200	Heat Transfer	3	F	ME 3300/05 & MATH 2250**
	ME 4300	Vibrations	3	F	ENGR 2140, 2170, ME 2030 & MATH 2250 or 2280
	PHYS 3310	Quantum Physics I	3	F	PHYS 2210/15 & PHYS 2220/25
PHYS 3320	Quantum Physics II	3	S	PHYS 3310	

Additional Degree Requirements: To complete a Bachelor's Degree at SUU, students must have a total of 40 upper-division credits. Applied Math majors may need up to 14 additional upper-division electives outside of their major requirements. They may also need as many as 35 elective credits to meet the 120 credit degree requirement. The Math Department highly recommends that those seeking an Applied Math degree seek a minor in Chemistry, Computer Science, or Physics. Information on each of those minors is included in the tables on the following page.

Applied Math majors are strongly encouraged to choose one of the following minors

Minor in Chemistry

	Course	Title	Cr.	Sched.	Prerequisites/Notes
Required Courses	CHEM 1210/15	Principles of Chemistry I/Lab	4/1	F/S/SU	MATH 1050, MATH 1210, or ACT 26
	CHEM 1220/15	Principles of Chemistry II/Lab	4/1	F/S/SU	CHEM 1210/15
	Select 10 credits of CHEM including a year long series 2000 or above				
These are in major	CHEM 3610/15	Physical Chemistry I/Lab	3/1	F	CHEM 1220/25 & MATH 1220
	CHEM 3620/25	Physical Chemistry II/Lab	3/1	S	CHEM 3610/15

Minor in Computer Science

	Course	Title	Cr.	Sched.	Prerequisites/Notes
Required Courses	CS 1400	Fundamentals of Programming	3	F/S	CSIS 1030 or MATH 1050 (within 4 years)
	CS 1410	Object Oriented Programming	3	F/S/SU	CS 1400
	CS 2420	Intro to Alg's & Data Structures	3	F/S/SU	CS 1410
Elective Courses (9 credits required)	CS 2450	Software Engineering	3	F	CHEM 1220/25
	CS 3150	C and C++ Programming	3	F	CS 2420
	CS 3300	Mobile App Develop. Android	3	S-ODD	CS 2420
	CS 3550	Found. of Computation Theory	3	S	CS 2300 or MATH 3120
	CS 3600	Operating Systems	3	S	CS 2420
	CS 4300	Mobile App Develop. iOS	3	S-EVEN	CS 2420
	CS 4350	Web Programming	3	F-ODD	CS 2420
	CSIS 3700	Introduction to Digital Forensics	3	F	IS 2600 or instructor permission
	CSIS 4540	Human-Computer Interfaces	3	S-ODD	CS 2420
	CSIS 4700	Internet Forensics & Cyber Sec	3	S	CSIS 3700 or instructor permission
EET 2780	Digital Electronics I	3	F/SU	MATH 1050 or higher	

Minor in Physics

	Course	Title	Cr.	Sched.	Prerequisites/Notes
	PHYS 2210/15	Physics for Sci./Engr. I/Lab	4/1	F/S/SU	MATH 1210
	PHYS 2220/25	Physics for Sci./Engr. II/Lab	4/1	F/S/SU	PHYS 2210/15 & MATH 1220
	PHYS 3310	Quantum Physics I	3	F	PHYS 2210/15 & 2220/25
	PHYS 3320	Quantum Physics II	3	S	PHYS 3310
Electives (4 credits)	CHEM 3610/15	Physical Chemistry I/Lab	3/1	F	CHEM 1220/25 & MATH 1220
	CHEM 3620/25	Physical Chemistry II/Lab	3/1	S	CHEM 3610/15
	EE 2250/55	Electric Circuits/Lab	3/1	F/S/SU	MATH 2250**, PHYS 2220/25, ENGL 2010
	MATH 3800	Partial Differential Equations	3	F-ODD	MATH 2210 & MATH 2250 or 2280
	ME 3200	Thermodynamics	3	S	PHYS 2220
	ME 3300/05	Fluid Mechanics/Lab	3/1	S/SU	MATH 1220 & PHYS 2210

* If not Calculus-ready, students must take MATH 1050 and MATH 1060 before taking MATH 1210.

** MATH 2270 and 2280 can be substituted for MATH 2250.

*** Indicates the course will be taught As Needed; work with the designated Department for scheduling.