1. UVA Math courses sorted by subject

The tables below list UVA math courses sorted by subject that have been offered in the last 2 years. FS next to a course means that the course is offered every semester, F means every fall and S means every spring. For the remaining courses the table indicates the next planned offering if known. The courses listed as TBD are typically offered once every 2 years, but the exact schedule depends on the interests of the students and instructor availability. Further information about the next offering for these courses will likely be available by January 2026.

Algebra		Analysis and Probability	
3351 Elementary Linear Algebra	FS	3100 Intro to Probability	FS
3354 Survey of Algebra	FS	3250 Differential Equations	FS
4040 Discrete Math	F	3310 Basic Real Analysis	FS
4452 Algebraic Coding Theory	TBD	3340 Complex Variables	FS
4651 Advanced Linear Algebra	FS	4110 Intro to Stochastic Processes	FS
4652 Intro to Abstract Algebra	S	4140 Math of Derivative Securities	FS
4660 Algebraic Combinatorics	TBD	4220 PDE and Applied Math	F
5653 Number Theory	F26	4250 Diff Eq and Dynamical Systems	S
5657 Bilinear Forms and Group Reps	TBD	4300 Elementary Numerical Analysis	F26/S27
		4310 Intro to Real Analysis	F

Geometry and Topology		Other courses	
4330 Calculus on Manifolds	S	2315 Advanced Calculus and Algebra I	F
4559 Topological Data Analysis	TBD	3000 Transition to Higher Math	FS
4720 Intro to Diff Geometry	F26	3315 Advanced Calculus and Algebra II	S
4750 Intro to Knot Theory	TBD	4559 Introduction to Sequence Analysis	TBD
4770 General Topology	F	4840 Intro to Math Research	S
5700 Intro to Geometry	S	5080 Operations Research	S26
		5559 Neural Networks and RNA Structures	TBD

2. Tables of prerequisites

This section describes the prerequisite relations between different math classes and contains additional comments that should help you choose a suitable order in which to take the classes.

The 4 tables below list the prerequisites for math classes numbered above 3000. In each case, a non-empty entry at the intersection of row A and column B indicates that the course B is relevant for the course A, with the following meaning of the entries:

- 2 means that B is a prerequisite for A
- 2- means that B is strongly recommended for A (in some cases taking the two courses concurrently is fine as well, but it is best to check with the instructors)
- 1 means that B is recommended for A, although the knowledge of the material from B will by no means be expected in A.

All tables assume *transitivity* in the following sense: if C is required for B and B is required (resp. recommended) for A, then C is also required (resp. recommended) for A.

Proof prerequisites

- * in the column PB indicates that a prior proof-based course is required (Math 3000, 3310, 3354 or comparable experience). This requirement is explicitly specified only for classes which do not already require Math 3310 or 3354.
- **Math 3000 Transition to Higher Mathematics** is an introduction to proofs class. While it is not an official prerequisite for any other math class, students without prior experience constructing rigorous proofs are encouraged to take Math 3000 before Math 3310, 3354 and any 4000+ level math classes. It is generally expected that students take Math 3000 at the same time or right after Math 2310, but the course is in no way dependent on the material from 1310, 1320 or 2310.

Algebra	PB	1320	3100	3351	3354	4651	4652
3351		2					
3354		2		2-			
4040	*	2	1		1		
4452				2	2		
4651	*			2	2-		
4652				2	2		
4660				2	2		
5653				1	2		
5657				2	2	1	1

Analysis/Prob	PB	1310	1320	2310	3100	3250	3310	3340	3351	4110	4310
3100		2	2	2-							
3250		2	2						1		
3310		2	2	1							
3340		2	2	2			1				
4110					2		1		2		
4140	*				2		1		2	1	
4220						2			2		
4250						1	2		2		1
4300		2	2			1	1		2		
4310							2				

Geom/Top	2310	3250	3310	3351	3354	4310
4330	2		2	2		2-
4720	2	2	2-	2		
4750	2			2	2	
4770	2		2	1	1	1
5700	2			2	1	

Other courses	PB	1310	1320	2310	3310	3351	4040
4559 Intro to Sequence Analysis						2	1
5080 Operations Research	*	2	2	1		2	

3. SOME ADDITIONAL COMMENTS

- **Math 2315/3315 Advanced Calculus and Linear Algebra I/II** is a two semester sequence which covers the majority of content from 2310 (Calc III), 3250 (differential equations) and 3351 (elementary linear algebra) and some additional topics from real analysis, set theory and combinatorics.

- **Math 4840 Introduction to Mathematical Research**. The mathematical content discussed in this course (as well as the exact course format) varies from year to year. The subjects covered in recent years include Number Theory, Knot Theory, Permutation Groups, Combinatorics/Representation Theory and Geometric Group Theory, and sometimes the course does not concentrate on a particular area of mathematics. There are no strict prerequisites for this class, and the expectations about the background vary from year to year. Students are encouraged to contact the instructor as soon as possible if they are not sure they have adequate background for the class.