MA 511: Advanced Calculus I — Course Calendar

Spring 2026 Course Calendar

The table below lists the planned schedule for this course. See the course syllabus for additional course information. Typos are possible. You are responsible for tracking university closures, final exam schedules, etc. through the NC State University Academic Calendar.

Due dates for assignments should be confirmed through Moodle, always check the assignments themselves for specific dates. These due dates are tentative based on the start of the semester; dates may change on Moodle without changing on this schedule.

MA 511: Advanced Calculus I — Spring 2026 Course Calendar

Week	Date Range	Lecture / Session	Sections Covered	Assignments
1	Jan 12 – Jan 16	Introduction to real numbers; logic and proof writing; sets and functions; bounded sets (supremum and infimum); Nested Interval Property.	This week we cover the basics of logic and proofs and introduce sets of real numbers. The textbook in this course is not required; however, if you have it, note the section numbers for each lecture (we begin with a slightly different ordering of topics). Major concepts: Introduction to real numbers. Logic and proof writing. Sets and functions, bounded sets (supremum and infimum) and the Nested Interval Property.	Introduce yourself on the class forum.
2	Jan 19 – Jan 23	Cardinality and density; basic topology of open and closed sets; the Cantor set and a quick look at dimension.. *Martin Luther King Jr. Day*		Quiz 1
3	Jan 26 – Jan 30	Sequences: definition, convergence, boundedness; limit theorems for sequences.		Quiz 2; Homework 1; Labor Day (no class on Monday).
4	Feb 02 – Feb 06	Cauchy sequences; subsequences; Monotone Subsequence Theorem; Monotone Convergence		Quiz 3

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		Theorem; Bolzano–Weierstrass Theorem.		
5	Feb 09 – Feb 13	Continuity; consequences of continuity on closed intervals [a,b].		Quiz 4; Homework 2; Wellness Day (university holiday on Tuesday).; Midterm 1
6	Feb 16 – Feb 20	Partitions, lower and upper sums; integrability.. *Wellness Day*		Quiz 5
7	Feb 23 – Feb 27	Integrating discontinuous functions using measure; beginning of differentiability.		Quiz 6; Homework 3
8	Mar 02 – Mar 06	Mean Value Theorem and preliminary results; Fundamental Theorem of Calculus; inverse functions.		Quiz 7
9	Mar 09 – Mar 13	Review and assessment week for Midterm 2.		Quiz 8; Homework 4; Fall Break (no class Monday–Tuesday).; Midterm 2
10	Mar 16 – Mar 20	**Spring Break**		
11	Mar 23 – Mar 27	Sequences of functions and convergence.		Quiz 9
12	Mar 30 – Apr 03	Limit theorems for sequences of functions; sup norm; metric spaces and examples.		Quiz 10
13	Apr 06 – Apr 10	Contraction mapping; series of real constants.		Quiz 11; Homework 5
14	Apr 13 – Apr 17	Weierstrass M-test for series of functions; power series and why they are useful.		Quiz 12
15	Apr 20 – Apr 24	Taylor series (coefficients); an introduction to Fourier series.		Quiz 13; Homework 6
16	Apr 27 – Apr 28	Wrap up, including a student choice activity.		Thanksgiving Break (no class Wednesday–Friday).

Final exams for courses with set meeting times are determined before the semester begins; find your final exam schedule here: NC State University Final Exam Calendar for the date and time of all of your final exams. I recommend that you schedule the final exam for this course early in the semester.