

Tentative Weekly Schedule: Math 401/501, Advanced Calculus I

The schedule of activities below is tentative and subject to change.

Week	Topics	Reading	Important Dates
1 8/18-8/20	Sets; Logic	Ch. 1-2 Hammack	
2 8/25-8/27	Proof strategies	Ch. 4-7 Hammack	
3 9/1-9/3	More on proofs; Functions	Ch. 8,9,12 Hammack	
4 9/8-9/10	Sets of numbers: naturals, rationals, reals and extended reals	§1-5 Ross	
5 9/15-9/17	Sequences & limits	§7-8 Ross	EXAM 1: 9/16
6 9/22-9/24	Limit theorems; Monotone & Cauchy sequences	§9-10 Ross	
7 9/29-10/1	Subsequences; Limit supremum & infimum	§11-12 Ross	
8 10/6-10/8	Series; Tests for convergence	§14-15 Ross	<i>No recitation 10/7: UNM holiday</i>
9 10/13-10/15	Wrap up Ross Ch. 2 Continuous functions	§17 Ross	
10 10/20-10/22	Properties of continuous functions	§18-19 Ross	EXAM 2: 10/21
11 10/27-10/29	Uniform continuity; Limits of functions	§19-20 Ross	
12 11/4-11/5	Derivatives	§28 Ross	<i>No class 11/3: Election Day</i>
13 11/10-11/12	Mean Value Theorem; Taylor's theorem	§29, 31 Ross	
14 11/17-11/19	The Riemann Integral	§32 Ross	EXAM 3: 11/18
15 11/24-11/25	Properties of the Riemann Integral	§33 Ross	<i>No class 11/26: Thanksgiving</i>
16 12/1-12/3	Fundamental Theorem of Calculus	§34 Ross	<i>Recitation moves online</i>
Finals Week	<i>Take home exam due 12/10</i>		

Required Textbooks:

1. Kenneth Ross, *Elementary Analysis*, Second Edition, Springer, 2013.
E-book available through UNM libraries.
2. Richard Hammack, *Book of Proof*, Third Edition, Self Published, 2020.
E-book available at <https://www.people.vcu.edu/~rhammack/BookOfProof/>, downloads are free and legal.

Hard copies of both books are also available through the UNM Bookstore.