

MA 242
 Summer Session I
 May15 - June 18, 2019

1. There are 4 scheduled tests during the summer session I. Note that the tests occur on different week days.
2. TEXTBOOK: "Calculus for Engineers and Scientists, Vol. 3", 1st Edition, by J. Franke, J. Griggs, and L. Norris
3. WebAssign is required in MA242. Students should login at webassign.ncsu.edu to pay the fees for homework grading and for the textbook.
4. Contact Dr. LK Norris (lkn@ncsu.edu) if you have questions about the schedule.

<u>Date</u>	<u>Section</u>	<u>Topic</u>
5/15	1.1 1.2 1.3	3-D Coordinate Systems Vectors Begin: The Dot Product
5/16	1.3 1.4 1.5	Continue with: The Dot Product The Cross Product Begin: Equations of Lines and Planes
5/17	1.5 2.1	More on Equations of Lines and Planes Vector Functions & Space Curves

5/20	2.2 2.3	Derivatives and Integrals of Vector functions; parameterized curves Begin fundamental quantities for curves; Arc Length & Curvature
5/21	2.4 2.5	Intrinsic geometry of curves Applications to Physics and Engineering; projectile motion;
5/22	Wednesday	Review and Test #1
5/23	3.1 3.2 3.3	Multivariable Functions Limits and Continuity Begin Directional Derivative
5/24	3.3 3.4	Directional Derivative; Partial Derivatives, higher derivatives Tangent planes and Linear approximations Differentiability of multivariable functions
5/27	Monday	Holiday - No Classes
5/28	3.5	The Directional Derivative and the Gradient The Chain Rules

5/29	3.6 3.7	Optimization: local and global extreme values Lagrange multipliers (optional, if time permits)
5/30	Thursday	Review and Test #2
5/31	4.1 4.2	Double Integrals Over Rectangles; Iterated Integrals Double Integrals Over General Regions Applications of Double Integrals
6/03	4.3	Begin Triple integrals; applications of triple integrals
6/04	5.1 5.2	Double Integrals in Polar Coordinates Begin Triple Integrals in Cylindrical Coordinates
6/05	5.2 5.3	Finish: Triple Integrals in Cylindrical Coordinates; Triple Integrals in Spherical Coordinates
6/06	6.1 6.2	Vector fields

		Line Integrals of functions and vector fields- First briefly review parameterized curves from section 2.2
6/07	Friday	Review and Test #3
6/10	6.3 6.4	The Fundamental Theorem for Line Integrals; Conservative vector fields and potential functions Parametric surfaces
6/11	6.5	Surface Area of parameterized surfaces Surface integral of a Function Surface Integral of Vector Fields
6/12	7.1 7.2	Integral Curves of Vector Fields Divergence of a Vector Field Curl of a Vector Field
6/13	7.3	Green's Theorems for Circulation and Flux
6/14	Friday	Review and Test #4

6/17	7.4	Stokes' Theorem
6/18	7.5	The Divergence Theorem Last day of classes
6/19	Wednesday	Final Exams
6/20	Thursday	Final Exams