

MA 242  
Summer Session II  
June 24 - July 26, 2019

1. There are 4 scheduled tests during the summer session I. Note that the tests occur on different days of the week.
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](http://webassign.ncsu.edu) to pay the fees for homework grading and for the textbook.
4. Contact Dr. LK Norris ([lkn@ncsu.edu](mailto:lkn@ncsu.edu)) if you have questions about the schedule.

<u>Date</u>	<u>Section</u>	<u>Topic</u>
6/24	1.1 1.2 1.3	3-D Coordinate Systems Vectors Begin: The Dot Product
6/25	1.3 1.4 1.5	Continue with: The Dot Product The Cross Product Begin: Equations of Lines and Planes

6/26	1.5 2.1	More on Equations of Lines and Planes Vector Functions & Space Curves
6/27	2.2 2.3	Derivatives and Integrals of Vector functions; parameterized curves Begin fundamental quantities for curves; Arc Length & Curvature
6/28	2.4 2.5	Intrinsic geometry of curves Applications to Physics and Engineering; projectile motion;
7/1	<b>Monday</b>	<b>Review and Test #1</b>
7/2	3.1 3.2 3.3	Multivariable Functions Limits and Continuity Begin Directional Derivative
7/3	3.3 3.4	Directional Derivative; Partial Derivatives, higher derivatives Tangent planes and Linear approximations Differentiability of multivariable functions
7/4	<b>Thursday</b>	<b>Holiday - No Classes. The 4<sup>th</sup> of July</b>
7/5	3.5	

		The Directional Derivative and the Gradient The Chain Rules
7/8	3.6 3.7	Optimization: local and global extreme values Lagrange multipliers (optional, if time permits)
7/9	<b>Tuesday</b>	<b>Review and Test #2</b>
7/10	4.1 4.2	Double Integrals Over Rectangles; Iterated Integrals Double Integrals Over General Regions Applications of Double Integrals
7/11	4.3	Begin Triple integrals; applications of triple integrals
7/12	5.1 5.2	Double Integrals in Polar Coordinates Begin Triple Integrals in Cylindrical Coordinates

7/15	5.2 5.3	Finish: Triple Integrals in Cylindrical Coordinates; Triple Integrals in Spherical Coordinates
7/16	6.1 6.2	Vector fields Line Integrals of functions and vector fields- First briefly review parameterized curves from section 2.2
7/17	Wednesday	<b>Review and Test #3</b>
7/18	6.3 6.4	The Fundamental Theorem for Line Integrals; Conservative vector fields and potential functions Parametric surfaces
7/19	6.5	Surface Area of parameterized surfaces Surface integral of a Function Surface Integral of Vector Fields

7/22	7.1 7.2	Integral Curves of Vector Fields Divergence of a Vector Field Curl of a Vector Field
7/23	7.3	Green's Theorems for Circulation and Flux
7/24	<b>Wednesday</b>	<b>Review and Test #4</b>
7/25	7.4	Stokes' Theorem
7/26	7.5	The Divergence Theorem Last day of classes
7/29	<b>Monday</b>	<b>Final Exams</b>
7/30	<b>Tuesday</b>	<b>Final Exams</b>