

## MA 242 Summer Session I

May13 - June 16, 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](http://webassign.ncsu.edu) to pay the fees for homework grading and for the textbook.
4. Contact Safa Janajra([sjanajr@ncsu.edu](mailto:sjanajr@ncsu.edu)) if you have questions about the schedule.

Data	Section	Topics
wed,5/13	1.1	3-D Coordinate Systems
	1.2	Vectors
	1.3	Begin: The Dot Product
Thu,5/14	1.3	Continue with: The Dot Product
	1.4	The Cross Product
	1.5	Begin: Equations of Lines and Planes
Fri,5/15	1.5	More on Equations of Lines and Planes

	2.1	Vector Functions & Space Curves
Mon,5/18	2.2 2.3	Derivatives and Integrals of Vector functions;  parameterized curves  Begin fundamental quantities for curves; Arc Length & Curvature
Tue,5/19	2.4	Intrinsic geometry of curves Applications to Physics and Engineering; projectile motion;
Wed,5/20		Test #1
Thu,5/21	3.1 3.2 3.3	Multivariable Functions  Limits and Continuity  Begin Directional Derivative
Fri,5/22	3.3 3.4	Directional Derivative; Partial Derivatives, higher derivatives Tangent planes and Linear approximations Differentiability of multivariable functions
Mon,5/25	HOLIDAY	NO CLASSES
Tue,5,26	3.5	The Directional Derivative and the Gradient

		The Chain Rules
Wed,5/27	3.6 3.7	Optimization: local and global extreme values
Thu,5/28	Thursday	Test #2
Fri,5/29	4.1 4.2	Double Integrals Over Rectangles; Iterated Integrals  Double Integrals Over General Regions  Applications of Double Integrals
Mon,6/1	4.3	Begin Triple integrals; applications of triple integrals
Tue,6/2	5.1 5.2	Double Integrals in Polar Coordinates Begin Triple Integrals in Cylindrical Coordinates
Wed,6/3	5.2 5.3	Finish: Triple Integrals in Cylindrical Coordinates;  Triple Integrals in Spherical Coordinates
Thu,6/4	6.1	Vector fields

		Line Integrals of functions and vector fields- First briefly review parameterized curves from section 2.2
Fri,6/5	Friday	Test # 3
Mon,6/8	6.3 6.4	The Fundamental Theorem for Line Integrals;Conservative vector fields and potential functions  Parametric surfaces
Tue,6/9	6.5	Surface Area of parameterized surfaces  Surface integral of a Function Surface Integral of Vector Fields
Wed,6/10	7.1 7.2	Integral Curves of Vector Fields Divergence of a Vector Field  Curl of a Vector Field
Thu,6/11	7.3	Green's Theorems for Circulation and Flux
Fri,6/12	Friday	Test #4
Mon,6/15	7.4	Stokes' Theorem

Tue,6/16	7.5	The Divergence Theorem Last day of classes
Wed,6/17 Thu,6/18	Wednesday Thursday	Final Exams