

## Sample Course Syllabus for Math 2243, Section A, Calculus III

**Credit Hours:** 4

**Instructor:** Name

**Office:** MPCS #

**Phone:** #

**E-mail:**

**Office Hours:** times; or by appointment

### **Class Meeting and location:**

**Prerequisite Courses:** A minimum grade of C in Calculus II or equivalent.

**Text:** Calculus, 4<sup>th</sup> edition, by James Stewart, Brooks/Cole.

**Course Description:** Topics in real valued functions of several variables. Topics include polar coordinates, parametric equations, vectors in two and three dimensions, quadric surfaces, partial derivatives and applications, multiple integrals and applications, line integrals and Stoke's and Green's theorem.

**Course Objectives:** At the end of the course, students are expected to (1) be able to visualize geometry in three-dimensional space; (2) be able to do the calculus of scalar functions of several variables and the calculus of vector functions; (3) be able to apply multivariable calculus concepts to real world problems. For General Education Objectives, see

[http://academics.georgiasouthern.edu/provost/instruction/gened\\_outcomes.html](http://academics.georgiasouthern.edu/provost/instruction/gened_outcomes.html)

**Assessment of Course Objectives:** Student achievement will be measured through three hourly exams worth a total of 66% of the course grade, a comprehensive final worth 24% of the course grade, and labs, quizzes, and homework worth 10% of the course grade.

**Grading Policy** (varies by instructor): Grades will be assigned based on the percentage of points earned. A student earning 90-100% of the total points will receive a course grade of an A, 80-89% a B, 70-79% a C, 60-69% a D and below 60% an F.

**Make-up Policy** (varies by instructor): No make-up exams will be given. When a student misses an exam the score from the final exam will be substituted for the missing exam score. No late homework will be accepted.

**Attendance Policy** (varies by instructor): Students are expected to attend each class meeting and pay attention but attendance will not be taken. A student who misses class is responsible to find out what was discussed and learn the material that was covered on the missed day. The instructor is **not** responsible for re-teaching material missed by a student who did not attend class.

**Academic Dishonesty Policy:** Any student who exhibits academic dishonesty in any form will receive a failing grade (F) for the entire course and will be reported to the University Judicial Officer. For more information, see the Student Guide at

<http://students.georgiasouthern.edu/sta/guide/>.

**Civility Statement:** See the Student Conduct Code at the URL above.

**Disability Policy:** See [www2.georgiasouthern.edu/Disability\\_Services/](http://www2.georgiasouthern.edu/Disability_Services/).

**Additional Help:** The Academic Success Center offers free peer tutoring during the week.

Contact the tutorial centers for exact hours at 681-0321 or

<http://academics.georgiasouthern.edu/success/>.

### **Important Dates:**

October 14:	Last day to drop without academic penalty
November 26-28:	Thanksgiving Holiday
December 5:	Last day of classes
December 11:	Final Exam 8:00-10:00 am

**Course Outline (MATH 2243):** The following schedule assumes a 4 hour a week with 15 weeks. Two weeks are for reviews and tests. The weekly time distribution for the 13 lecturing weeks is suggested as follows.

13.1 Three-Dimensional Coordinate Systems

13.2 Vectors

13.3 The Dot product

13.4 The Cross product

13.5 Equations of Lines and Planes

13.6 Cylinders and Quadric Surfaces

13.7 Cylindrical and Spherical Coordinates

**Review, TEST 1**

14.1 Vectors Functions and Space Curves

14.2 Derivatives and Integrals of Vector Functions

14.3 Arc Length and Curvature

14.4 Motion in Space: Velocity and Acceleration

15.1 Functions of Several Variables

15.2 Limits and Continuity

15.3 Partial Derivatives

15.4 Tangent Planes and Linear Approximations

15.5 The Chain Rule

15.6 Directional Derivatives and the Gradient Vector

15.7 Maximum and Minimum Values

15.8 Lagrange Multipliers

**Review, TEST 2**

16.1 Double Integrals over Rectangles

16.2 Iterated Integrals

16.3 Double Integrals over General Regions

16.4 Double Integrals in Polar Coordinates

16.5 Applications of Double Integrals

16.6 Surface Area

16.7 Triple Integrals

16.8 Triple Integrals in Cylindrical and Spherical Coordinates

16.9 Change of Variables in Multiple Integrals

**Review, TEST 3**

17.1 Vector Fields

17.2 Line Integrals

17.3 The Fundamental Theorem for Line Integrals

17.4 Green's Theorem

17.5 Curl and Divergence

17.6 Parametric Surfaces and Their Areas

17.7 Surface Integrals

17.8 Stokes' Theorem

17.9 The Divergence Theorem

**REVIEW**