Calculus for Technology II, Math 2133
Spring 2015

Instructor:	David Stapleton		
Office:	MSCS 436	**Office phone:**	744-2302
Office hours:	Mon. 10:30-11:20, Wed. 9:00-9:50, Fri. 9:30-10:20 with the Friday hour held at the Mathematics Learning Success Center (MLSC) on the 5th floor of Edmon Low Library. Other times are available by appointment.		
E-mail:	david.stapleton@okstate.edu		
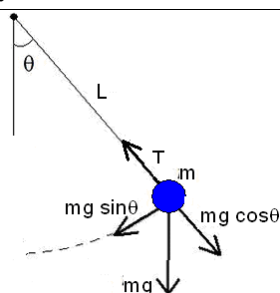
$$V = \iint_R f(x, y)\, dA$$
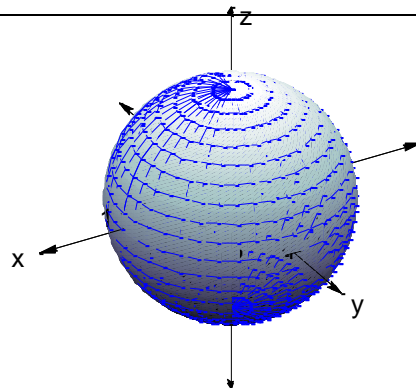
Course Description: This course is a continuation of Calculus for Technology I (MATH 2123) and is an applications-oriented terminal calculus course intended for students in the School of Technology and for certain other students who are not expected to take more than one year of calculus. The primary topics are calculus with trigonometric, exponential, and logarithmic functions, integration techniques, and multivariable calculus.

Prerequisites: **MATH 2123** (Calculus for Technology I) and **MATH 1613** (Trigonometry) or similar.

Textbook: **Technical Calculus with Analytic Geometry, 5th Ed**., by Peter Kuhfittig is required.

Calculator: A **graphing calculator** is highly recommended, but a (non-graphing) scientific calculator may be used if it is able to calculate trigonometric functions and logarithms. A calculator with a built-in **computer algebra system** (TI-89, TI-Nspire CAS, etc.) is the most useful, but is not required. *Only one calculator may be used on each exam and cell phone calculators, laptops and handheld computers are not permitted.* The OSU Mathematics Department has a limited number of graphing calculators to loan to students, but these must be returned undamaged at the end of the semester or a charge will be assessed.

Other Resources: Some course handouts will be posted on **D2**L: https://oc.okstate.edu/. There is a wealth of supporting calculus material available on the **web** and occasional references will be made in class to Wikipedia, Wolfram, Paul's Online Math Notes, SOS Math and other websites. An optional (not expected) **Solutions Manual** for the textbook is available for purchase.

Tutoring: Free tutoring is available much of the day in the Math Learning Success Center (**MLSC**), located on the fifth floor of the OSU Library (see https://math.okstate.edu/mlsc).

Attendance: Regular class attendance is expected and roll will be taken approximately once each week with two points deducted from the student's total score after the first absence from roll.

Grade: There will be three midterm examinations and a final examination, each worth 100 points. There will also be eleven written homework assignments, worth 10 points each, but with the lowest score dropped, for a 100 possible homework points. This makes a total of $3 \times 100 + 100 + 100 = 500$ points possible for the course. The grade scale will be A: 87%-100%, B: 74%-86%, C: 61%-73%, D: 48%-60%, F: 0%-47% (unless easier curves are announced in class for specific exams).

Make-Up Exams: Make-up midterm exams require approval by the course instructor are for special circumstances such as illness, family emergency, job requirements, or required school activities and must be completed within one (class) week of the original test date. The final exam cannot be made up except in extreme circumstances and then only when approved by the instructor. Do not buy an airline ticket that causes a conflict with the final examination.

$$\frac{\partial e^{2xy}}{\partial x} = 2y e^{2xy} \qquad \int e^{2xy} dx = \frac{e^{2xy}}{2y} + f(y)$$

Incomplete Grade: The grade of "I" is given to students who satisfactorily completed the majority of the course work and whose work averages "D" or better, but who have been unavoidably prevented from completing the remaining work of the course. The maximum time allowed for a student to remove an "I" is one calendar year.

Academic Dishonesty/Misconduct: Oklahoma State University is committed to the maintenance of the highest standards of integrity and ethical conduct of its members. This level of ethical behavior and integrity will be maintained in this course. Participating in a behavior that violates academic integrity (e.g., unauthorized collaboration, plagiarism, multiple submissions, cheating on examinations, fabricating information, helping another person cheat, unauthorized advance access to examinations, altering or destroying the work of others, and fraudulently altering academic records) will result in your being sanctioned. Violations may subject you to disciplinary action including the following: receiving a failing grade on an assignment, examination or course, receiving a notation of a violation of academic integrity on your transcript, and being suspended from the University. You have the right to appeal the charge. Contact the Office of Academic Affairs, 101 Whitehurst, 405-744-5627. Go to academicintegrity.okstate.edu for a short video on OSU's academic integrity policy and additional information.

Office of Student Disability Services: (015 University Health Services) - According to the Americans with Disabilities Act, each student with a disability is responsible for notifying the University of his/her disability and requesting accommodations. If you think you have a qualified disability and need special accommodations, you should notify the instructor and request verification of eligibility for accommodations from the Office of Student Disability Services. Please advise the instructor as soon as possible, and contact Student Disability Services to ensure timely implementation of accommodations. Faculty have an obligation to respond when they receive official notice of a disability but are under no obligation to provide retroactive accommodations. To receive services, you must submit appropriate documentation and complete an intake process during which the existence of a qualified disability is verified and reasonable accommodations are identified. Call 405-744-7116 or go to www.okstate.edu/ucs/stdis/.

Syllabus Attachment: The general university syllabus attachment is found on the Academic Affairs' web site (http://academicaffairs.okstate.edu). Choose Faculty and Staff Resources, and then the Syllabus attachment for the appropriate semester.

Wk	#	Date	Section - Topic	Wk	#	Date	Section - Topic
1	1	Jan 12 Mon	Course Introduction Pre-Test	10	27	Mar 17 Mon	No Class - Spring Break
	2	Jan 14 Wed	6.1 Review of Trigonometry		28	Mar 19 Wed	No Class - Spring Break
	3	Jan 16 Fri	6.1 continued		29	Mar 21 Fri	No Class - Spring Break
2	4	Jan 19 Mon	No Class - Holiday			Mar 23 Mon	7.6 Integration by Trig Substitution
	5	Jan 21 Wed	6.2 Derivatives of Sine & Cosine			Mar 25 Wed	7.6 continued
	6	Jan 23 Fri	6.2 continued			Mar 27 Fri	7.7 Integration by Parts
			HW1 6.1, 6.2				HW9 7.5, 7.6
3		Jan 26 Mon	6.3 Other Trig Functions	11	30	Mar 30 Mon	7.7 continued
	7	Jan 28 Wed	6.3 continued		31	Apr 1Wed	9.1 Surfaces in 3 Dimensions
	8	Jan 30 Fri	6.4 Inverse Trig Functions		32	Apr 3 Fri	9.2 Partial Derivatives
			HW2 6.3				HW10 7.7, 9.1
4	9	Feb 2 Mon	6.5 Deriv. of Inverse Trig Functions	12	33	Apr 6 Mon	9.2 continued
	10	Feb 4 Wed	6.5 continued		34	Apr 8 Wed	9.5 Iterated Integrals
	11	Feb 6 Fri	Catch up and Review for Exam 1		35	Apr 10 Fri	9.6 Volumes by Double Integration
			HW3 6.4, 6.5			W deadline	HW11 9.2, 9.5
5	12	Feb 9 Mon	Exam 1 6.1-6.5	13	36	Apr 13 Mon	9.7 Mass & Centroids
	13	Feb 11 Wed	6.6 Exponential & Log Functions		37	Apr 15 Wed	Catch up and Review for Exam 3
	14	Feb 13 Fri	6.6 continued		38	Apr 17 Fri	Exam 3 7.6,7.7,9.1,9.2,9.5-9.7
			HW4 6.6a				HW12 9.6, 9.7 (not turned in)
6	15	Feb 16 Mon	6.7 Derivative of Log Functions 6.8 Derivative of Exp Functions	14	39	Apr 20 Mon	8.1 Vectors & Parametric Equations
	16	Feb 18 Wed	6.7 & 6.8 continued		40	Apr 22 Wed	8.2 Arc Length
	17	Feb 20 Fri	6.9 L'Hospital's Rule		41	Apr 24 Fri	8.3 Polar Coordinates
			HW5 6.6b, 6.7, 6.8				
7	18	Feb 23 Mon	7.1 The Power Rule Again	15	42	Apr 27 Mon	8.4 Curves in Polar Coordinates
	19	Feb 25 Wed	7.2 The Exp. & Log Forms		43	Apr 29 Wed	8.5 Areas in Polar Coordinates
	20	Feb 27 Fri	7.2 continued		44	May 1 Fri	Review for Final Exam
			HW6 6.9, 7.1				
8	21	Mar 02 Mon	7.3 Trigonometric Forms				Final Exam
	22	Mar 04 Wed	7.3 continued	16		Class time	
	23	Mar 06 Fri	7.4 Further Trig Forms			MWF 11:30	Wed May 6, 10:00-11:50 am
			HW7 7.2, 7.3				
9	24	Mar 9 Mon	7.5 Inverse Trig Forms				
	25	Mar 11 Wed	Catch up and Review for Exam 2				
	26	Mar 13 Fri	Exam 2 6.6-6.9, 7.1-7.5				
			HW8 7.4				