

autumn 2016 multivariable calculus MAC 2313 U04 Zweibel DMA28 zweibel@fiu.edu 3053483479

office hours: MWF 2-2:45, WF 4:05-4:45, or by appointment

prerequisite:  $\geq C$  in MAC 2312 or equivalent

performance measures: grades on exams

exams: 3 100 point exams, on 9/19, 10/17, 11/21, and a 120 point comprehensive final exam on 12/5 at 2:15-4:15 in GC279A. Use of calculators, books,

notes, or man-made electronic devices of any kind on exams is prohibited.

Absence from an exam will result in a score of 0 for that exam, unless the absence is caused by circumstances which are beyond the student's control,

and these circumstances are verified by documentation from an appropriate authority (not a family member). If this occurs for one of the 100 point

exams, then the grade will be based on the remaining exams. If this occurs for the final exam then a make-up final exam will be given. D=210

grading scale: A=378, A-=357, B+=336, B=315, B-=294, C+=273, C=252, A

text: Calculus (early transcendentals) by Anton, Bivens, Davis, 10<sup>th</sup> ed, Wiley, ISBN 9780471664769

course description: differential and integral calculus of functions of several variables

course objective: some understanding of the higher dimensional versions of differentiation and integration, and the connections between them

course outline: ① coordinate systems in space, vectors (chapter 11); ② vector-valued functions of 1 real variable (12.1-12.5); ③ real-valued functions of several real variables (chapter 13); ④ double integrals (14.1-14.3); ⑤ triple integrals (14.5-14.7);

⑥ vector fields, line integrals, work, surface integrals, flux, and versions of the fundamental theorem of calculus (14.4, chapter 15)

course outcomes : The successful student will be able to ① manipulate vectors geometrically and algebraically; ② visualize simple 2-dimensional surfaces in 3-dimensional space; ③ visualize simple 1 dimensional curves in 2 or 3 dimensional space; ④ compute limits of functions of several variables; ⑤ compute partial derivatives of functions of several variables; ⑥ interpret the gradient of a function of several variables; ⑦ compute multiple integrals of functions of 2 or 3 variables, over simple bounded regions in 2 or 3 dimensional space; ⑧ visualize simple vector fields in 2 or 3 dimensional space; ⑨ compute line integrals and surface integrals, and find appropriate parameterizations of appropriate curves or surfaces in order to do so; ⑩ apply the 2 or 3 dimensional versions of the fundamental theorem of calculus.

~~important~~ notable dates : no class on 9/5, 11/11, 11/25 due to closure of university; drop day is 10/31

early alerts : I am likely to notify advisors of poor performance on exams using the early alert system