CALCULUS 3   MTWF 1:00-1:50PM   FALL 2004   HICKOK 307

Instructor:	Jonathan White
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Office:	Hickok 206A
Office Hours:	MTWF 3:00-3:50pm and by appointment
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Text:	*Calculus, Single and Multivariable*, 3rd Edition, Hughes-Hallett et al.
Problem Sets & Quizzes:	Assorted Problem Sets will be given throughout the term to supplement class work. Many of these will benefit from the use of the software package Maple, which is available on the computers in the labs throughout campus. Quizzes will also be given frequently. Combined these will be worth 200 points (2/7 of the final grade).
Exams:	There will be three in-class exams administered during class time. The dates of these are indicated in the schedule on the back side of this sheet. These exams will be worth 100 points (1/7 of the final grade) each.

The final exam will be held during finals week at the date and time indicated on the back side of this sheet. The final will be worth 200 points (2/7 of the final grade). |
| Grading: | Grading will approximately follow a 90% A, 80% B, 70% C, 60% D scale. |
| Makeups: | Makeups for exams will generally be allowed only under extenuating circumstances, with documentation and advance notice when humanly possible. Late problem sets and quizzes will generally not be accepted, and if accepted due to extenuating circumstances will generally be subject to a penalty of 20% of the possible points for each day past due. |

Calculus 3 is the culmination of the calculus sequence, and this presents challenges in at least three respects. First, ability to visualize and use spatial intuition is taken to a new level. Second, computations are in some cases correspondingly bigger and longer. Third, abstract theoretical considerations become a more central element, sometimes overshadowing mere computations as the most important material.

In response to all three of these considerations the judicious use of technology can be a valuable aid. Sophisticated calculators such as the TI-89 and computer software packages such as Maple, when used properly, can lead to easier and deeper understanding of the course material. However the use of this technology itself involves a significant learning experience, and often significant frustrations. We will attempt to use Maple in this course when the benefits are the greatest, and assist you in its use enough to keep the frustrations to a minimum.

If at some point these challenges or frustrations get too bad, I strongly encourage you to see me for extra explanation -- don't wait until you're overwhelmed. I'm here to help.

Tentative Schedule

Monday August 23rd §12.1 f:$\mathbb{R}^2 \to \mathbb{R}$	Tuesday August 24th Lab: §12.2 & 12.3 Graphs	Wednesday August 25th §12.4 Linear Functions	Friday August 27th §12.5 f:$\mathbb{R}^3 \to \mathbb{R}$
Monday August 30th §13.1 & §13.2 Vectors	Tuesday August 31st Lab: §12.6 Limits	Wednesday September 1st §13.3 Dot Products	Friday September 3rd §13.4 Cross Products
Monday September 6th No classes – Labor Day	Tuesday September 7th Lab: Slopes	Wednesday September 8th §14.1 & §14.2 Partial Derivatives	Friday September 10th §14.3 Local Linearity
Monday September 13th §14.4 Gradients and f_u in $\mathbb{R}^2$	Tuesday September 14th Lab: Gradients	Wednesday September 15th §14.5 Gradients and f_u in $\mathbb{R}^3$	Friday September 17th §14.6 The Chain Rule
Monday September 20th §14.7 2nd-order Partials	Tuesday September 21st Lab: §14.8 Differentiability	Wednesday September 22nd Review	Friday September 24th **Exam 1**
Monday September 27th §15.1 Local Extrema	Tuesday September 28th Lab: Optimization	Wednesday September 29th §15.2 Optimization	Friday October 1st §15.3 Constrained Opt.
Monday October 4th §16.1 Definite Integrals	Tuesday October 5th Lab: Riemann Sums	Wednesday October 6th §16.2 Iterated Integrals	Friday October 8th §16.3 Triple Integrals
Monday October 11th No class – Fall Break	Tuesday October 12th No class – Fall Break	Wednesday October 13th §16.3 Triple Integrals	Friday October 15th App. B: Polar Coordinates
Monday October 18th §16.4 Int. in Polar Coord.	Tuesday October 19th Lab: Integration	Wednesday October 20th §16.5 Int. in Sph. and Cyl.	Friday October 22nd §16.6 Applications to Prob.
Monday October 25th §16.7 Change of Variables	Tuesday October 26th Lab: Monte Carlo Methods	Wednesday October 27th Review	Friday October 29th **Exam 2**
Monday November 1st §17.1&2 Parametric Curves	Tuesday November 2nd Lab: §17.3 Vector Fields	Wednesday November 3rd §17.4 Flow	Friday November 5th §18.1 Line Integrals
Monday November 8th §18.2 Line Integrals	Tuesday November 9th Lab: §18.3 Path Independence	Wednesday November 10th §18.4 Green's Theorem	Friday November 12th §17.5 & §19.1 Flux Integrals
Monday November 15th §19.2 Tidy Flux Integrals	Tuesday November 16th L ab: §20.1 Divergence	Wednesday November 17th §19.3 Less Tidy Flux Integrals	Friday November 19th §20.2 The Div. Theorem
Monday November 22nd §20.3 Curl	Tuesday November 23rd Lab: Divergence and Curl	Wednesday November 24th No class – Thanksgiving	Friday November 26th No class – Thanksgiving
Monday November 29th §20.4 Stokes' Theorem	Tuesday November 30th Lab: §20.5 The Fun. Theorems	Wednesday December 1st Review	Friday December 3rd **Exam 3**
Monday December 6th App. C: Complex Numbers	Tuesday December 7th App. C: Complex Numbers	Wednesday December 8th Review	
Tuesday December 14th – 1pm – Final Exam			

Any students with disabilities which might affect their performance in this class should contact me as soon as possible to arrange accommodations.

The faculty has adopted a policy on academic integrity. It is your responsibility to understand and follow it.

Diversity, in all its forms, is valuable.