


MAT201 ADVANCED CALCULUS



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3 SEPTEMBER - 9 SEPTEMBER


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10 SEPTEMBER - 16 SEPTEMBER

-  [Lecture 1 \(updated\)](#)

Minor corrections

Line 3 of the solution of Example 6.8.7: should be $\sin \pi$ instead of $\sin 0$.

Line 1 of the solution of Example 6.8.10: the sign of the two infinity should be interchanged.
-  [Lecture 2](#)

17 SEPTEMBER - 23 SEPTEMBER

-  [Lecture 3](#)
-  [Lecture 4](#)

Very minor typo: k should be n in the solution of Example 11.1.2.
-  [Problem Set 1](#)
-  [Lecture 5](#)

24 SEPTEMBER - 30 SEPTEMBER

-  [Problem Set 1 Solution](#)

Restricted Available from 29 September 2018
-  [Lecture 6](#)

In Definition 11.1.21, add the sentence

"It is monotonic iff it is either increasing or decreasing."

In Example 11.1.25, it should be $3/(n+6) < 3/(n+5)$.

 [Lecture 7](#)



Minor correction: In the solution (a) of Example 11.1.30, a few symbols for "greater than" are changed to the symbols for "greater than or equal to".

 [Lecture 8](#)



Correction: The geometric series before Definition 11.2.1 should sum to 1, instead of 2. This is because $a=1/2$ (instead of $a=1$).

 [Problem Set 2](#)



Problem 5(c): x should be n .

1 OCTOBER - 7 OCTOBER

 [Lecture 9](#)



Minor changes to Example 11.2.120 are highlighted in the updated version.

 [Lecture 10](#)



 [Problem Set 3](#)



 [Lecture 11](#)



page 4 line 7: The lower bound of the improper integral next to $1/[2(11)^2]$ should be 11, instead of 10.

8 OCTOBER - 14 OCTOBER

 [Optional Assessment for Enrichment 1](#)



Restricted Available from **1 January 2003**

 [Lecture 12](#)



 [Lecture 13](#)



 [Lecture 14](#)



 [Solution to Problem Set 3](#)



Restricted Available from **12 October 2018, 12:00 PM**

 [Problem Set 4](#)



Restricted Available until **8 October 2018, 5:00 PM**

 [Solution to Problem Set 2](#)








Restricted Available from **6 October 2018**








The solution to Problem 3(b) is now corrected and slightly improved.


Minor correction to solution of Problem 6(b). The correction is boxed.

15 OCTOBER - 21 OCTOBER




-  [Lecture 15](#)
 -  [Lecture 16](#)
 -  [Problem Set 5](#)
 - In Problem 3(b), the lower bound for n should be 2, instead of 1 to avoid dividing by $\ln 1=0$.
 -  [Solution to Problem Set 4](#)
 - Restricted Available from **19 October 2018, 12:00 PM**
 -  [Lecture 17](#)
-

22 OCTOBER - 28 OCTOBER

-  [Lecture 18](#)
 -  [Lecture 19](#)
 -  [Solution to Problem Set 5](#)
 - Restricted Available from **26 October 2018, 12:00 PM**
 -  [Lecture 20](#)
 -  [Problem Set 6](#)
 -  [Solution to Problem Set 6](#)
 - Restricted Available from **2 November 2018, 12:00 PM**
 -  [Optional Assessment 2](#)
 - Restricted Available from **18 October 2018, 1:00 PM**

 -  [Test 1 Solution](#)
-

29 OCTOBER - 4 NOVEMBER

-  [Lecture 21](#)
 - In Lecture 21 on 29/10/2018, the topic that will be covered is the **functions of several variables**.
 - Hi guys. You can also view on how to plot the level curves in this video: <https://www.youtube.com/watch?v=uaHiAxFESc4>
 -  [Lecture 22](#)
 - In Lecture 22 on 30/10/2018, the topic that will be covered is the **limit and continuity for functions of several variables**.
 -  [Lecture 23](#)
 - In Lecture 23 on 2/11/2018, we will have a lecture on **partial derivatives**.
-

5 NOVEMBER - 11 NOVEMBER

12 NOVEMBER - 18 NOVEMBER

 [Lecture 24.](#)



Tangent Planes and Linear Approximation!

 [Lecture 25](#)



It is "Tewesday": Total differentials and chain rule.

Updated: I have inserted the proof to Chain Rule for the first case.

 [Problem Set 7](#)



For tutorials on 19-23 November 2018

 [Solution to Problem Set 7](#)



19 NOVEMBER - 25 NOVEMBER

 [Lecture 26](#)



Lecture 26. Implicit. Differentiation.

 [Lecture 27](#)



Directional Derivatives and Gradient Vector

 [Problem Set 8](#)



Please make correction on question no. 5. The function as you can see include the natural number e. There seems to be an abundant y after $e^{\wedge}3$. The correct one will be $e^{\wedge}(3y)$ and no extra y at the back.

 [Solution for Problem Set 8](#)



26 NOVEMBER - 2 DECEMBER

 [Lecture 28](#)



Maximizing Directional Derivatives and Tangent Planes to the Level Surfaces

 [Lecture 29](#)



Maximum and Minimum Values

 [Quiz 29/11/2018 Solution](#)



 [Problem Set 9](#)



 [Problem Solution 9](#)



3 DECEMBER - 9 DECEMBER

 [Lecture 30](#)



Lagrange multiplier

 [Lecture 31](#)



Double Integrals

 [Lecture 32](#)



Iterated Integrals

 [Problem Set 10](#)



 [Solution to Problem Set 10](#)



Forgive my handwriting.

10 DECEMBER - 16 DECEMBER

 [Lecture 33](#)



Double integrals over general region

 [Problem Set 11](#)



 [Partial Solution Problem Set 11 \(Priority questions\)](#)



 [Partial Solution Problem Set 11](#)



17 DECEMBER - 23 DECEMBER

 [Lecture 34](#)



Double integrals in polar coordinates

24 DECEMBER - 30 DECEMBER

 [Quiz MAT201](#)



There are 10 questions in this quiz. Please answer all questions.

This quiz can be answered from 11AM 24/12/2018 until 11AM 25/12/2018

You have one hour to complete all the questions.

 [Solution for Test 2](#)




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