

**Math 254H  
(advanced track)**

**Class Syllabus**

**Spring Semester 2015**

**LECTURE:** A106 Wells Hall, MWF from 11.30 to 12.20

**INSTRUCTOR:** Prof. Casim Abbas

**OFFICE:** D309 Wells Hall

**PHONE:** 355 9698

**EMAIL:** [abbas@math.msu.edu](mailto:abbas@math.msu.edu)

**URL:** <http://www.math.msu.edu/~abbas>

**OFFICE HOURS:** Wednesday 14.00 to 16.00, or by appointment

**TEXTBOOK:** 'Multivariable Mathematics' by Theodore Shiffrin, John Wiley & Sons

**BRIEF DESCRIPTION:** This course covers the usual topics of a Multivariable Calculus course such as MTH234, but many additional topics are covered as well. The main difference is that the emphasis is on theory and not on computational skills. Also, the modern language of Manifolds and Differential Forms is developed and used while the standard course essentially uses 19<sup>th</sup> century mathematical language. Students are expected to understand theoretical concepts and mathematical proofs. Students will also write mathematical proofs, i.e. develop and coherently formulate mathematical arguments. If you feel that you have difficulties with the pace of the course, the emphasis on theory or that you are not sufficiently prepared you are urged to consider switching to MTH234.

**RECITATION SESSIONS:**

Thursday, 15.00 to 16.20 in 222EBH. The purpose of these is to discuss homework problems and to answer questions related to the lecture. Quizzes and exams are held during recitation hours (see below).

**HOMEWORK:** Unless announced otherwise, there will be a homework assignment each Monday which is due on Wednesday two days later and another one on Friday which is due the Monday after.

Homework given on Wednesday will not be collected for grading, but it will be discussed in recitation the day after if necessary.

Homework has to be legible and tidy. Mathematical arguments and explanations have to be well-organized using full English sentences. *Mean what you say and say what you mean* (this also applies to exams and quizzes). If they are not you will not receive credit or you may be asked to redo the homework.

Another part of the homework consists of reading the sections in the textbook which have been covered in the lecture. This includes working through the examples in the relevant sections of the book including those which I did not present in the lecture. I am assuming that you have done so.

**QUIZZES:** There will be quizzes during each recitation except on February 26, April 23 and April 30. There will be twelve quizzes altogether. The two lowest quiz scores will be dropped.

**EXAMS:** There will be two of these, scheduled for February 26 and April 23.

**FINAL EXAM:** Thursday, May 7 from 10.00 to 12.00 in A106 Wells Hall.

**GRADES:** The tentative grading scale will be as follows: 90% or more of the available score will result in a grade of 4.0, 85% or more will result in a 3.5 and 80% or more will result in a 3.0. I will require 70% or more for a 2.0 and 60% or more for a 1.0. I may modify the grading scale at the end of the semester, but the scale above is the 'worst case scenario'.

The different components of the course contribute towards your final grade as follows (I may modify this during the semester if necessary):

Quizzes: 30%  
Homework: 10%  
Exams 1 and 2: 35%  
Final exam: 25%

**IMPORTANT DATES:**

Monday – 01/12/2015 – Classes Begin.

Friday – 01/16/2015 – Online open add period for spring semester ends at 8pm.

Monday – 01/19/2015 – Martin Luther King Day - University open, classes cancelled.

Monday 01/19/2015 to Friday 01/23/2015 – Students go to Undergraduate office, C212 Wells Hall for Mathematics enrollment changes. (Late add's, drop to lower course, section changes)

Friday – 02/06/2015 – End of 100% Tuition Refund

Wednesday – 03/04/2015 – Middle of Semester. Last day to drop a course without a grade being reported.

Monday 03/09/2015 to Friday 03/13/2015 – Spring Break

**Friday – 05/01/2015 – Last day of classes.**

**ACADEMIC HONESTY:** Academic dishonesty is considered a serious offense at MSU. Therefore, you are expected to complete all quizzes, tests and exams, without assistance from any source. Otherwise, students may face failure in the course and an administrative sanction which may include suspension or expulsion from the university. For more information see <https://www.msu.edu/unit/ombud/RegsOrdsPolicies.html>