COURSE SYLLABUS

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**********YEAR COURSE OFFERED: 2014

SEMESTER COURSE OFFERED: Fall

DEPARTMENT: Mathematics

COURSE NUMBER: Math 3363

NAME OF COURSE: Introduction to Partial Differential Equations

NAME OF INSTRUCTOR: Maxim Olshanskiy

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The information contained in this class syllabus is subject to change without notice. Students are expected to be aware of any additional course policies presented by the instructor during the course.
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Learning Objectives

The following topics will be covered in this class:

- Heat and Wave equations.
- The method of separation of variables.
- Fourier Series.
- Sturm-Liouville Theory / Adjoint Operators.
- Fourier Transforms.
- PDEs in more than one space dimension (Cartesian coordinates)

If time permits, we will also discuss reaction-diffusion equations and the Turing instability, and some numerical methods.

You are expected to be able to apply the methods from the course to problems pertaining to the topics mentioned above.

Major Assignments/Exams

The course grade will be based on Homework, Midterms, and Finals. Homework will be assigned weekly, and randomly selected problems from the homework will

be graded. Your total homework will constitute 15% of your grade. There will be 3 midterm exams, each worth 20% of the grade. The final exam will be worth 25% of the grade.

Required Reading

Applied Partial Differential Equations by Richard Haberman. (4th Edition or 5th Edition)

List of discussion/lecture topics

Heat, Wave and Laplace equations, the method of separation of variables, Fourier Series, Sturm-Liouville Theory / Adjoint Operators, Fourier Transforms.

Prerequisites

Math 2433 Calculus III and Math 2331 Linear Algebra, an introductory course in ordinary differential equations is desirable .