Mathematics 297R, "Introduction to Fourier Analysis"
Fall, 2001

Instructor: Michael Rogers
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Hours: TBA and by appt. Generally available afternoons.

Credit: This course is for four semester-hours of elective credit.

Texts: R.T. Seeley, *An Introduction to Fourier Series and Integrals*, 1966. Handouts will also be used.

Course Content: Mathematics 297R, "Introduction to Fourier Analysis," is an introduction to fourier analysis. The course will extend the student's analytical techniques to cover elements of the fourier series, fourier integrals, and the discrete fourier transform.

Course Goals: At the end of the course, the student should achieve the following goals: to find the fourier series of a periodic function; to find the fourier transform of a function of one real variable; to find the fourier transform of a function on a cyclic group; on appropriate functions, to perform the fouriest analysis; and to understand some applications of fourier analysis.

Coursework: Problems will be assigned and collected for credit. To receive full credit the work must be correct and **done alone**; the student will have the opportunity to revise their work until it is correct. The problems are the major component of the course.

Homework exercises will be assigned. These are for the benefit of the student and will not be collected.

Sometimes the student will have to present work to the instructor.

Examinations: Two midterm examinations will be given outside class. They will be administered at a time convenient to both the instructor and the student. The dates may be rescheduled at the instructor's discretion.

A cumulative final examination will be given at the time scheduled by the registrar.

Grading: Grades will be based on the problems collected for credit (50%), the final examination (20%), the midterm examinations (10% each), class presentations (10%). These percentages are approximate. This work will be evaluated in relation to the goals set for the course.

The Honor Code of Oxford College applies to all work submitted for credit in this course. By placing your name on such work, you pledge that the work has been done in accordance with the given instructions and that you have witnessed no Honor Code violations in the conduct of the assignment.