PMath 940 Modular Forms, Fall 2021
C.L.Stewart

The theory of modular functions and modular forms has been applied in order to solve Fermat's Last Theorem, in the construction of highly connected sparse graphs, in the estimation of Kloosterman sums, in the characterization by Tunnell of those integers n for which there exists a right triangle with all sides rational and area n and in the monstrous Moonshine of Conway and Norton which connects the coefficients of the q-expansion of the modular j-function with the Monster simple group. In this course we shall give an introduction to modular functions and forms. We shall discuss the basic properties of these functions, indicate the connection with doubly periodic meromorphic functions and study some important modular forms in detail.

We shall follow the course notes on my webpage. No text is required.