Catalog Description:

Homogeneous and non-homogeneous difference equations of one or several variables, Markov chains, graph theory, network flows.

Prerequisite:

{C- or better in 2568 or 5520H; and C- or better in 4530, 5530H or Stat 420}; or {credit for 568, 571, or 520H; and credit for 530, 531H, or Stat 420}.

Exclusions: Not open to students with credit for 578.

Topics List:

1. Homogenous and non-homogeneous difference equations.
2. Application in finance, genetics, economics.
3. Matrix methods, nonlinear equations, stability, bifurcation, harvesting.
4. Application of Markov chains with absorbing and non-absorbing states, limiting behavior.
5. Graph theoretical algorithms, network flows, applications.
6. Linear/integer programming.

Comment:

This course requires the student to use a programming language chosen by the instructor to complete required course work.