# MAE 288A: Optimal Control

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**Content:** We will discuss control of discrete-time stochastic systems and continuous-time/continuous-space deterministic systems. The emphasis will be on nonlinear systems. Dynamic programming will be the fundamental tool used to solve the control problems.

**Texts:** There is no textbook. Recommended reading can be found in the list below.

– Bertsekas, *Dynamic Programming and Optimal Control*
  – Alt.: Bertsekas, *Dynamic Programming: Deter. and Stoch. Models*
– Fleming and Rishel, *Deterministic and Stochastic Optimal Control*
  – Fleming/Soner and Bardi/Capuzzo-Dolcetta are more modern and more available (for purchase) than Fleming/Rishel, but may be more technical.
– Falcone and Ferretti, *Semi-Lagrangian. . . Hamilton–Jacobi Equations*
– Numerous additional recommended texts indicated in class include:
  – Any good probability text (e.g., Billingsley)
  – Norris, *Markov Chains*
  – Karlin/Taylor, *A First Course in Stochastic Processes*

**Grading:** The final course numerical grade will be obtained from a simple summation of all the scores on the homework assignments and the take-home final assignment.
– All work is due at the time indicated on the assignment. Homework handed in up to two hours late will still be accepted but with a loss of 20% of that homework grade.
– Regrade requests must be submitted within one week of the returned assignments.
– Because of staffing constraints, it is possible that not all problems will be graded.