Lec25 IAM550 J. Raeder 12/05/2019 Review

Announcements

- **Friday 12/13/2019 6:00pm – 8:00pm FINAL EXAM A in McConnell 240**
- **Tuesday 12/17/2019 10:30am - 12:30pm FINAL EXAM B in Parsons N108**
- **Send me an email by Friday, 12/6.**
- **I'm on travel 12/7-15.**
- **There will be TA office hours Tuesday 12/10 and Thursday 12/12 9am-11am in W114.**
- **Student evaluations are open**

All on the blackboard or real time MATLAB

- Vectors and matrices, indexing
- How to fill a vector with values (zeros, ones, random)
- How to generate and use random numbers (rand)
- For loops
- While loops
- Linear mapping (0,1) → (a1,a2)
- Conditional statements: if – elseif – else – end
- Logical operators == ~= < > <= >= && || ~ (eq ne lt gt le ge and or not)
- Exponential growth
- Example: compound interest and inflation
- Differential equation for exponential growth
- Cauchy form → convert higher order to system of first order equations
- Numerical solutions: Euler, Predictor-Corrector, Runge-Kutta
- Systems of linear equations → matrix notation
- Gauss elimination: 3 rules: (a) multiply with a constant, (b) add equations, (c) swap equations.
- Goal: upper diagonal form, then back-substitution
- Show lab11 → Gauss elimination, timing