Name: Date:

Math 131 Numerical Analysis Concepts

First half of the semester	
Concept/Idea	**Definition/Example**
Taylor's Theorem	
Big O notation	
Ill-conditioned problem	
Algorithm stability	
Roundoff error	
Truncation (discretization) error	
Divided Differences	
Fixed-point iteration	
Nonlinear equation	
Newton's method	
Bisection method	
Interpolation/Approximation	
Lagrange polynomials	
Piecewise polynomials	
Cubic Splines	

Second half of the semester	
Concept/Idea	**Definition/Example**
Least Squares	
Forward Differences	
Central Differences	
(n+1)-point formulas	
Richardson extrapolation	
Midpoint Rule	
Trapezoid Rule	
Simpson's Rule	
Composite Integration	
Closed/Open Newton-Cotes	
Romberg Integration	
Euler's method	
Explicit Trapezoid method	
Runge-Kutta methods	
Multi-step methods	