ES301 Final Portfolio Checklist (Winter 2007) **Due Monday March 19, 2007**

In a neat, professional-looking package (3-ring binder) that is well labeled, include the following class activities, in order:

- Grapher Tutorial
  - Scatter plot / line plot
  - Scatter plot / point modification
  - Scatter plot with labels
  - Scatter plot with lines, points, labels
  - Combination Line / Bar Graph
- Lab Exercise Ternary Diagrams
  - QFL Data renormalization / hand plot
  - Grapher QFL Diagram
  - Waltham Ternary Plot Exercise (7 plots of petrologic chemistry data)
- Surfer Tutorial
  - Demo Contour Map (data, grid, map)
  - Demo Contour Map with Color Fill
  - Demo Wireframe Map
  - Demo Wireframe with Color Fill Zones
  - Demo Post / Contour Map Overlay
  - Demo 3D Surface Map
- Surfer DEM Lab Exercise
  - DEM / contour map of Monmouth quad
  - Marys Peak Contour Map
  - Marys Peak Shaded Relief
  - Marys Peak Vector
  - Marys Peak Contour / Vector Overlay
  - Hometown quad contour map
  - Hometown quad shaded relief
  - Hometown vector map
  - Hometown quad contour / vector overlay
- Geostatistics Reading Questions
  - Intro questions
  - Frequency raw/% calculations
  - Intro / definition questions
- Geostatistics Example Problems
  - Temperature frequency distribution
  - Grapher bar-freq. diagram
  - Grapher scatter plot
  - Stat. summary calculations
  - Excel Frequency Distribution
  - Excel Cumulative Frequency Distribution
  - Excel Weighted Mean Calculations
  - Normal Distribution Sketch Graph
  - Excel Regression Equation / Line Fit
- Alluvial Fan Morphometry Exercise
- Hillslope / Data Analysis Lab
  - Example histogram / frequency calculations
  - Example T-test analysis
  - Appalachian Hillslope Data Statistical Summary
  - Appalachian Hillslope Data T-Test
  - Appalachian Hillslope Written Summary / Concluding Questions
- Final Integrated Lab Project
  - Task1 Mt. Bachelor Contour Map 10-ft
    - Mt. Bachelor Contour Map 20-ft
    - Mt. Bachelor Shaded Relief 335 sun azimuth
    - Mt. Bachelor Shaded Relief 200 sun azimuth
    - Mt. Bachelor Wireframe
    - Mt Bachelor Contour/Vector Overlay
    - Bachelor Butte USGS 10-m DEM Shaded Relief Map (scaled w/north arrow)
    - Bachelor Butte USGS DRG Base Map (scaled w/ north arrow)
  - Task 2 Rose Diagram / fracture data
  - Task 3 – Appalachian Morphometry Exercise
    - X-Y Plot of Drainage Area (y axis) vs. Slope (x axis) Fernow Area (with linear regression)
    - X-Y Plot of Drainage Area (y axis) vs. Slope (x axis) North Fork Area (with linear regression)
    - X-Y Plot of Drainage Area (y axis) vs. Slope (x axis) Little River Area (with linear regression)
    - X-Y Plot of Valley Width (y axis) vs. Distance from Divide (x axis) Fernow Area (with linear regression)
    - X-Y Plot of Valley Width (y axis) vs. Dist. From Divide (x axis) North Fork Area (with linear regression)
    - X-Y Plot of Valley Width (y axis) vs. Dist. From Divide (x axis) Little River Area (with linear regression)
    - Rose Diagram of Hillslope Aspect Fernow Area
    - Rose Diagram of Hillslope Aspect North Fork Area
    - Rose Diagram of Hillslope Aspect Little River Area
    - Polar Plot of Slope Gradient vs. Aspect Fernow Area
    - Polar Plot of Slope Gradient vs. Aspect North Fork Area
    - Polar Plot of Slope Gradient vs. Aspect Little River Area
    - X-Y Plot of Slope Length (y axis) vs. Hillslope Gradient (x axis) Fernow Area (with linear regression)
    - X-Y Plot of Slope Length (y axis) vs. Hillslope Gradient (x axis) North Fork Area (with linear regression)
    - X-Y Plot of Slope Length (y axis) vs. Hillslope Gradient (x axis) Little River Area (with linear regression)
    - Hillslope Statistical Summary Data
  - Task 4 – Newberry Cone Analysis
    - Cone Distance between cone 1 and cones 2-296
    - Cone Azimuth between cone 1 and cones 2-296