Principia College Sedimentary Geology GEOL 330

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Lab – Drawing Structural and Isopachous Maps

**Purpose:**

1. To become familiar with drawing contour maps, both structural and isopachous (thickness)
2. To learn to interpret structural contour maps
3. To learn to interpret changes in thickness relative to the structure of an area

**Methods and Questions:**

1. Two maps with drill holes and associated stratigraphic data are provided.
2. On the Lawrence County map, the elevation of the top of the Herrin #6 Coal (middle Pennsylvanian Carbondale Formation) is given for each drill hole.
   1. Contour all of the data points. Use the simplest interpretations. Keep your lines as smooth and uniform (from one contour line to the next) as possible while still honoring the data.
   2. Interpret your map. Is there a pattern?
   3. Label any structural features you recognize.
3. On the Fayette County map, for each drill hole there are 3 pieces of data recorded: elevation on the top of the Herrin Coal, thickness of the Herrin Coal, and thickness of the interval between the top of Herrin Coal and the top of the somewhat older Springfield #5 Coal.
   1. First color-code your data for easier recognition. For example, highlight in yellow the thickness of the Herrin Coal and underline the thickness of the interval between the coals for each data point.
   2. Draw a structure map on top of the Herrin Coal (contour the elevation of the top of the Herrin Coal), using the guidelines given above in 2a.
   3. Interpret your map. Is there a pattern?
   4. Label any structural features you recognize.
   5. Now look at the trend in thickness of the Herrin Coal relative to the structural features.
   6. Do the same for the thickness of the interval between the coals.
   7. What trends do you see?
   8. What do these trends suggest?