**ES302 Quantitative Methods Reading Review Exercise NAME\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Read the Text Reading entitled “Chapter 2 – Contouring and Contouring Techniques”, answer the following questions and define the following terms. Provide sketches or images where required.**

1. Define the Following Terms:
2. Contour Line
3. Isopach Map
4. Isobar Map
5. Isotherm Map
6. Isolith Map
7. Examine Figures 2-1 and 2-2, what is a structure contour map; Draw a sketch or image capture to demonstrate your answer.
8. Examine Figure 2-3. Compare and contrast the contour patterns associated with steeply sloped surfaces compared to more gently sloping surfaces. Draw a sketch or image capture to demonstrate your answer.
9. List the five rules for constructing contour lines.
10. Draw a sketch showing contour map view orientation, compared to cross-sectional view.
11. What is an index contour, describe it’s appearance, and why is it important?
12. True or False: it’s always good to draw contour lines with indelible, non-erasable ink when drawing by hand.
13. List and discuss the four methods of contouring discussed, provide sketches or image captures to demonstrate your answers.
14. Examine Figure 2-16, data point examples to be contoured by hand. Extract or print the figure, and hand contour the data using a contour interval of 20 feet. Follow the five rules for constructing contour lines, that you listed in question 4 above.
    1. Is the geological feature you contoured generally an “Up Feature” with highest elevations in the middle, or a “Down Feature” with lowest elevations in the middle?
15. Describe or defined the following terms associated with Computer Contouring Concepts
    1. X, Y, Z data model used in surface modeling
    2. Grid Method (draw or image capture a sketch to support your answer)
    3. Triangulation Method (draw or image capture a sketch to support your answer)
16. Examine the structure contour map in Figure 2-26; note the elevation values are negative, below sea level. Is this structure best described as an “anticline” or “syncline”?