**SOIL 4234 Laboratory #12**

**In-field Precision Agriculture Data Sheet (15 points)**

Student

Lab

TA

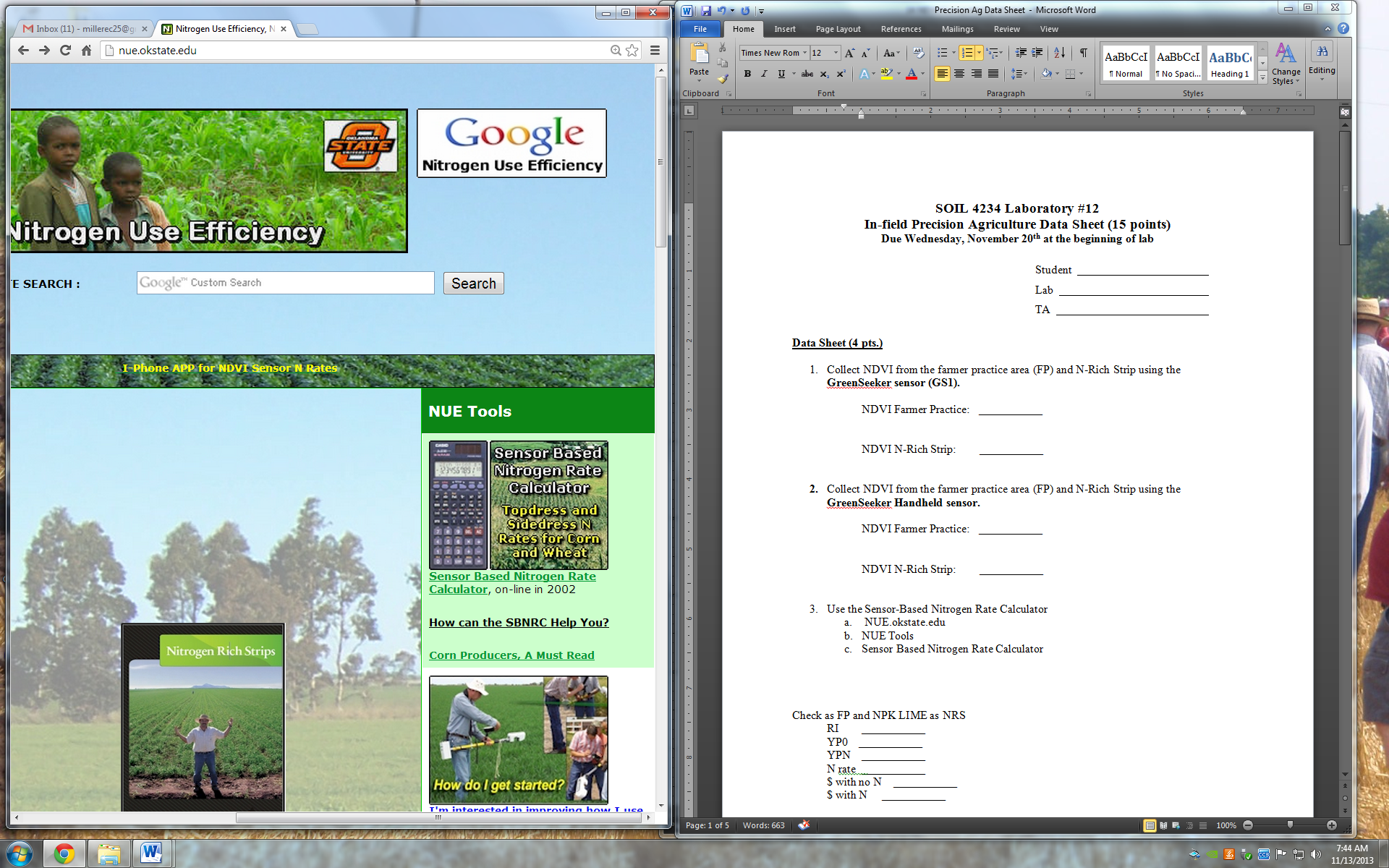
**Data Sheet (10 pts.)**

1. Collect NDVI from the farmer practice area (FP) and N-Rich Strip using the **GreenSeeker Handheld sensor.**

NDVI Farmer Practice: \_\_0.39\_\_\_\_\_

NDVI N-Rich Strip: \_\_0.75\_\_\_\_\_\_

1. Use the Sensor-Based Nitrogen Rate Calculator
   1. NUE.okstate.edu
   2. NUE Tools
   3. Sensor Based Nitrogen Rate Calculator



* 1. #1. Winter Wheat (US Grain Belt)
  2. Within Oklahoma
  3. Planting Date: 08/10/2020
  4. Day Prior to Sensing: 10/25/2020
  5. Location: Stillwater
  6. NDVI Farmer Practice (from Above)
  7. NDVI N-Rich Strip (from Above)
  8. Maximum Yield for Region: 100 bu/ac
  9. Expected Grain Price: $6.23/bu
  10. Fertilizer Cost: $0.55/lbs actual N

1. Record Outputs for the GreenSeeker Handheld sensor.
   1. GreenSeeker Handheld sensor.

Response Index (RI): \_\_\_\_\_\_\_\_\_\_\_

Days, GDD>0: \_\_\_\_\_\_\_\_\_\_\_  
 Yield Potential (YP0): \_\_\_\_\_\_\_\_\_\_\_  
 Yield Potential (YPN): \_\_\_\_\_\_\_\_\_\_\_  
 Cumulative GDD: \_\_\_\_\_\_\_\_\_\_\_

N rate recommendation: \_\_\_\_\_\_\_\_\_\_\_  
 Gross Return (no N fertilizer): \_\_\_\_\_\_\_\_\_\_\_  
 Gross Return (using N rec): \_\_\_\_\_\_\_\_\_\_\_

**Report** (15 pts. total)

**Questions**

1. (10 pts.) Please Include the Data Sheet.
2. (2 pts.) Compare and contrast the two light sensors (Greenseeker, Canopeo) discussed in class; give one advantage and one disadvantage for both sensors
3. (1.5 pts.) Soil Sensing Technology
4. (1.5 pts.) The one prerequisite for using the GreenSeeker sensor system to make N fertilizer recommendations is the establishment of an N-Rich reference strip which is representative of the entire field. Explain how last year’s crop, soil type, and producer management practices can influence the NDVI collected from the N-Rich Strip in terms of mineralization and immobilization.