GEOGRAPHY 485: Remote Sensing I
Fall 2021

Quiz 1 - 25 points

Please answer the following questions in complete sentences, unless stated otherwise. You are welcome to refer to course materials and other resources while working on answers, but all questions should be answered using your own words and following the UO academic guidelines regarding plagiarism and academic conduct. The Canvas 'simcheck' automatic review site will be used on all submissions.

1. Now that you have been introduced to some of the main themes, what aspects of remote sensing are you most interested in? Note: this can be something we have not covered yet. What part of the course are you most looking forward to? [5 points]

2. What colors would the human eye would perceive viewing equal amounts of the following wavelengths of electromagnetic energy shining onto a white surface [5 points]:

a) Blue + Green = _____
b) Cyan + Magenta = _____
c) Red + Green + Blue = _____
d) Green + Near-infrared (NIR) =_____
e) Near-infrared (NIR) + Far-infrared (FIR) = _____

3. What is Wien's Displacement Law? How could we use this concept to estimate the age of stars in our universe? [5 points]

4. You are part of team planning a remote sensing mission to determine vegetation health/stress in Oregon. You have been asked to advocate for one visible-NIR band (400-1100 nm) and one SWIR band (1100-2400 nm), each with a spectral range of 10 nm. With respect to absorption of electromagnetic radiation in the atmosphere and spectral reflectance of healthy vs. stressed vegetation, which do you choose and why? [5 points]

5. What is the revisit time of an earth observation satellite? Describe one way you could make the revisit time of a pushbroom sensor shorter by altering 1) the sensing instrument and 2) the orbital characteristics of the satellite platform. What would be compromised after making these alterations? [5 points]