

## Assignment 5 – GGS416

### *Preparing your satellite image analysis project coursework*

*Due October 29<sup>th</sup>, 2023*

This week you will need to begin coursework planning. This will take the form of a written introduction, research question(s), and literature review for submission and evaluation.

Each of these steps should include:

1. A written introduction which provides a general overview of your proposed research project. This should be between 400-500 words, providing a general contextual overview of the problem. You will want to include key statistics which demonstrate the relevance of the topic you have chosen (e.g., deforestation in the Appalachian Mountains has been taking place at an average rate of  $x$  percent per year) (30 points).
2. Specification of your proposed research question(s) (20 points).
3. A written literature review which provides 5 key citations to relevant papers that you have obtained from the scientific literature pertaining to your research topic and actually read. You should consider both theoretical and empirical research. It is advisable to find key statistics from past studies which you can include in your review to enable you to be analytical, and illustrate relevance quantitatively. You should write 50-100 words per research paper reviewed. Stick to peer-reviewed, reputable journals for your paper selection (30 points).

In terms of research topic choice, do consider the range of spectral indices covered over the past couple of classes as indicative of the types of things you can detect when using multispectral satellite imagery. Ideally, for the final project you will gather time-series imagery for at least one location, so that you can extract spatio-temporal analytics of changing terrestrial processes (as measured via your desired spectral indices selection). This could include deforestation, urban sprawl, loss of snow cover or some other remotely-sensed phenomenon. At this stage, you do not need to select an imagery provider but do consider the length of time-series data potentially available (for free), as well as the resolution of the imagery.

You must submit the 5 papers you have read and reviewed as PDFs, to enable your analytical writing on your satellite imagery topic to be evaluated (20 points).

Submissions should be in a respectable report format with proper headings, figure numbers, figure titles, citations, page numbers etc. Use this as an opportunity to demonstrate your professional scientific writing voice (e.g., authoritative in tone, and avoiding easy mistakes like abbreviations).

The Mason honor code applies. All writing will be your own, produced entirely by you, with no assistance from other humans/machines.