

GEOG 270 / AVIA 270

The proliferation of sales and use of unmanned aerial vehicles has fostered innovative applications, and novel remote-sensing techniques and data analysis. Students in this course will gain substantive knowledge about the requirements and constraints affecting recreational as well as commercial and research remotely piloted aircraft system (RPAS) flights for geomatics applications and research. Theory and conceptual factors affecting flight, remote sensing, and spatial analysis with very-high resolution data will be discussed in addition to how to navigate regulatory requirements. Assignments emphasize these components and give students experience with applied aspects of flight campaign approval, setup, management, and success. At the end of this course, students should 1) be able to demonstrate their understanding and awareness of the requirements for RPAS flight and the successful completion of basic and advanced RPAS tests and flight approval or other civil or governmental evaluation and testing requirements 2) be able to design flight campaigns that integrate aviation restrictions and science objectives by understanding the relationship between flight planning and sampling design with the geomatics tools and software available to manage, manipulate, and analyze data collected from RPAS flights 3) critically evaluate potential research applications of RPASs to determine if the advantages of RPAS flight and data acquisition are justified, advance science, and can be achieved under current hardware, software, and regulatory constraints.

Assessment is a mixture of tests and assignments.