

REMOTE SENSING AND EARTH OBSERVATION GRADUATE CREDIT CERTIFICATE PROGRAM

Person-in-Charge	Karen Schuckman
Program Code	RMTSNG
Campus(es)	World Campus

The Certificate in Remote Sensing and Earth Observation helps geospatial professionals become skillful users of imagery and sensor data in the context of geographic information systems and spatial analysis. This program is designed specifically for GIS practitioners who lack formal education in techniques and technologies associated with spatial image analysis and earth observation methods in order to help them pursue professional development goals. The program engages key theories, current research, and contemporary techniques for the professional application of remote sensing in geospatial systems and analysis.

Effective Semester: Summer 2021

Expiration Semester: Summer 2026

Admission Requirements

Applicants apply for admission to the program via the Graduate School application for admission (<http://gradschool.psu.edu/prospective-students/how-to-apply/>). Requirements listed here are in addition to Graduate Council policies listed under GCAC-300 Admissions Policies (<http://gradschool.psu.edu/graduate-education-policies/>). International applicants may be required to satisfy an English proficiency requirement; see GCAC-305 Admission Requirements for International Students (<http://gradschool.psu.edu/graduate-education-policies/gcac/gcac-300/gcac-305-admission-requirements-international-students/>) for more information.

Intermediate-level experience with professional applications of geographic information systems is expected as pre-requisite knowledge. Coursework to establish that pre-requisite knowledge is available through the related Postbaccalaureate Certificate in GIS program (<https://bulletins.psu.edu/graduate/programs/certificates/geographic-information-systems-postbaccalaureate-credit-certificate-program/>).

Certificate Requirements

Requirements listed here are in addition to requirements listed in Graduate Council policy GCAC-212 Postbaccalaureate Credit Certificate Programs (<http://gradschool.psu.edu/graduate-education-policies/gcac/gcac-200/gcac-212-postbaccalaureate-credit-certificate-programs/>).

Students earn the certificate by completing four instructor-led online courses – three required and one elective. Students who successfully complete the program earn 12 academic credits.

Students admitted to the Department of Geography's Master of GIS degree program may count up to 15 credits of certificate program courses toward the M.G.I.S. degree, subject to restrictions outlined in GCAC-309 Transfer Credit (<https://gradschool.psu.edu/graduate-education-policies/gcac/gcac-300/gcac-309-transfer-credit/>). Certificate

students who wish to have certificate courses applied towards a graduate degree must apply and be admitted to that degree program. Admission to the M.G.I.S. graduate degree program is a separate step and is not guaranteed.

Code	Title	Credits
Prescribed Courses		
GEOG 480	Exploring Imagery and Elevation Data in GIS Applications	3
GEOG 883	Remote Sensing Image Analysis and Applications	3
GEOG 481	Topographic Mapping with Lidar	3
Electives		
GEOG 589 or GEOG 892	Emerging Trends in Remote Sensing Geospatial Applications of Unmanned Aerial Systems	3
Total Credits		12

Courses

Graduate courses carry numbers from 500 to 699 and 800 to 899. Advanced undergraduate courses numbered between 400 and 499 may be used to meet some graduate degree requirements when taken by graduate students. Courses below the 400 level may not. A graduate student may register for or audit these courses in order to make up deficiencies or to fill in gaps in previous education but not to meet requirements for an advanced degree.

Learning Outcomes

Application

- Apply knowledge of various remote sensing technologies and platforms for the creation of spatial information to address challenges in the private, commercial, and societal sectors.

Communication

- Communicate the nuances of complex spatial relationships with text, voice, and visual products to broadly inform professional and non-technical audiences in a range of contexts.

Creation

- Create innovative solutions by collecting remotely sensed observations to create new knowledge as exemplified in maps and databases to generate solutions to challenging problems.

Critical Thinking

- Objectively analyze and evaluate a situation in the context of available remotely sensed observations in support of further analysis, problem solving, and decision making.

Cultural Competence

- Demonstrate knowledge of cultural norms that are respectful of diversity and inclusion to establish a positive and professional work environment.

Ethics

- Demonstrate ethical conduct by producing quality work, contributing to the community, managing professional relationships by

establishing honest and respectful interactions among individuals and organizations.

Knowledge

- Apply knowledge of remotely sensed information using appropriate geographic information technologies in a variety of contexts to educate, solve problems and make decisions.

Professional

- Demonstrate conduct in alignment with professional standards in interpersonal communication, mediation, and respect for diversity while recognizing appropriate team roles in professional, community and education-based activities.

Research

- Combine accepted techniques and prior knowledge of remote sensing technologies to create new solutions for previously unencountered situations.

Contact

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Program Website	View (https://gis.education.psu.edu/remotesensing/certificate/)