USC Dornsife
Dana and David Dornsife
College of Letters, Arts and Sciences
Spatial Sciences Institute

SSCI 576, Remote Sensing Applications and Emerging Technologies

Syllabus

Units: 4

Term Day Time: Fall 2022, Tue and Thu from 9:00-10:50am

Location: AHF 145D and DEN@Dornsife

Instructor: Yi Qi, PhD
Office: AHF B55J
Regular Office Hours: Thursday 1-3pm PT. Also available by appointment via email.
Contact Info: yi.qi@usc.edu, 213-821-1589

Library Help: Andy Rutkowski
Office: LIPA B40-A
Office Hours: Thu 10am - 12 pm or by appointment
Contact Info: arutkows@usc.edu

IT Help: Dornsife Technology Services
Office: SHS 260
Contact Info: spatial_support@usc.edu, 213-740-2775

Course Scope and Purpose

This course is a required course for the Spatial Data Collection and Integration Graduate Certificate and an elective course for the Geographic Information Science & Technology (GIST), Geospatial Intelligence, and Geospatial Leadership Graduate Certificates as well as the GIST M.S. degree programs. This course explores some of the ways in which remote sensing systems provide geospatial information that is relevant, accurate, timely, accessible, available in an appropriate format and cost-effective. Recent developments in Earth observation such as imaging radar, LiDAR, hyperspectral sensors, SmallSats and unoccupied autonomous systems (UASs) are increasing the wealth of information that can be generated from remotely sensed data sources. Consequently, numerous new GIS applications that rely on advanced remotely sensed data sources have emerged at local, regional and global scales.

This a graduate level course, so you should expect this class to be both academically robust and intellectually challenging. As graduate students you are expected to engage with the information you are learning and to explore the heady cauldron of ideas, opinion, and analysis that describe our collective effort to thoroughly interrogate the subject at hand.

Learning arises from active engagement with the knowledge found in our reading materials and with one another. As in any graduate-level class, the instructor's role is that of a guide who keeps you on this path of discovery and you will find that you will learn much from your fellow classmates. The challenge for us is to replicate such an academic experience within the milieu of "online learning".

Learning Outcomes

On completion of this course, students should be able to:

- Explain the principles of remote sensing and the technical characteristics and constraints of Earth Observation missions.
- Generate geographical information by processing digital remotely sensed data and critically evaluate its use for human security and/or environmental applications.
- Specify and critically evaluate some of the opportunities and available methods for integrating remote sensing and GIS.

Students may vary in their competency levels on these abilities. You can expect to acquire these abilities only if you honor all course policies, attend classes regularly, complete all assigned work in good faith and on time, and meet all other course expectations of you as a student.

Prerequisite(s): None
Co-Requisite(s): None
Concurrent Enrollment: None
Recommended Preparation: SSCI 581: *Concepts for Spatial Thinking*

Class Conduct

Harassment, sexual misconduct, interpersonal violence, and stalking are not tolerated by the university. All faculty and most staff are considered Responsible Employees by the university and must forward all information they receive about these types of situations to the Title IX Coordinator. The Title IX Coordinator is responsible for assisting students with supportive accommodations, including academic accommodations, as well as investigating these incidents if the reporting student wants an investigation. The Title IX office is also responsible for coordinating supportive measures for transgender and nonbinary students such as faculty notifications, and more. If you need supportive accommodations you may contact the Title IX Coordinator directly (titleix@usc.edu or 213-821-8298) without sharing any personal information with me. If you would like to speak with a confidential counselor, Relationship and Sexual Violence Prevention Services (RSVP) provides 24/7 confidential support for students (213-740-9355 (WELL); press 0 after hours)

COVID-19 policy -- Students are expected to comply with all aspects of USC's COVID-19 policy including, but not limited to, vaccination, indoor mask mandate, and daily TrojanCheck. Failure to do so may result in removal from the class and referral to Student Judicial Affairs and Community Standards. Students are recommended to keep safe physical distancing, whenever possible, to prevent any possible transmission. Please contact your instructor if you have any safety concerns.

Diversity and Inclusion – It is my intent that students from all diverse backgrounds and perspectives be well served by this course, that students' learning needs be addressed both in and out of class, and that the diversity that students bring to this class be viewed as a resource, strength and benefit. It is my intent to present materials and activities that are respectful to everyone, and you are also expected to respect of others regardless of their race, ethnicity, gender identity and expressions, cultural beliefs, religion, sexual orientation, national origin, age, abilities, ideas and perspectives, or socioeconomic status. Your suggestions are encouraged and appreciated. Feel free to let me know ways to improve the effectiveness of the course for you personally or for other students.

Course Structure

As a graduate level course, you should expect this class to be both academically robust and intellectually and technically challenging. As a graduate student, you are expected to engage with the information and workflows you are learning as well as with one another. As in any graduate level class, the instructor's role is that of a guide who keeps you on path of discovery and you will find that you will learn much from your fellow classmates.

All course materials will be organized through D2L and will generally unfold on a weekly basis, with the week's material posted at the start of the week. The main theoretical concepts will be provided through course notes and assigned readings, and at times recorded video presentations. Hands-on practical exercises will use various software products accessible over the Internet. Assignments will give you an opportunity to internalize and apply the concepts

and theory learned from readings. Some assignments require student interaction; all will benefit from it.

Workload – This is a four credit, one semester graduate level course. Students should expect to spend 10-15 hours per week to complete the work in this class.

Technological and Communication Requirements

We have several technologies that will facilitate our course work and our interactions, despite our dispersed locations. The remote sensing software and data required for course assignments will be accessed using computing resources provided by the Spatial Sciences Institute. ArcGIS and Drone 2 Map are provided online via the SSI Server; hence, you do not need to install it on your own computer. Instead, every student must have the following technology requirements:

- A computer with a fast Internet connection.
- A functional webcam and a microphone for use whenever a presentation or meeting is scheduled.
- An up-to-date web browser to access the Server

If a student does not have access to any of these, please speak with the instructor at the start of the semester. Also, see the USC ITS Student Toolkit here: https://keepteaching.usc.edu/students/student-toolkit/

Desire2Learn (D2L) – This course will utilize the Desire2Learn (D2L) learning management system which allows students to access course content, upload assignments, participate in discussion forms, among other learning experiences. The D2L platform provides flexibility in the learning experience where students can participate in the course residentially or remotely, synchronously (meeting together at the same time) or asynchronously (accessing videos and course content outside of class).

SSI Server and Tech Support – This course utilizes the SSI Server which is a virtual desktop giving access to many different professional software. If you are unable to connect to the server or experience any type of technical issues, send an email using your USC account to SSI Tech Support at spatial_support@usc.edu, making sure to copy (cc) me on the email.

Communications – All assignments given and all materials to be handed in will be submitted via D2L. The instructor will also create and monitor discussion forums through which students can discuss issues and assignments as needed. Students should read all email sent from D2L or from course instructor(s) as soon as possible. Also, students who do not regularly use their USC email accounts should double-check to be sure that mail sent from both the D2L accounts and the instructor's account (noted above) to your USC account is forwarded to an address used regularly and does not go into junk mail. The instructor will endeavor to respond to all email within 24 hours of receipt, aiming for no more than 72 hours delay. In the rare case that an instructor is off-line for an extended periodof time, an announcement will be posted to the class D2L site. Due to the synchronous and asynchronous nature of this course, it is each student's responsibility to stay informed and connected with others in our

course. In addition to email, students are expectedto login to D2L regularly to check for announcements.

Discussion forums – On the D2L site, I will post a series of discussion threads relevant to various sections of the course. Discussions provide a key means for student-to-student discussion and collaboration that can replicate the face-to-face contact you may have experienced in traditional classrooms. Here students can provide support to each other while working on your assignments, sharing hints and helpful tips, as you would in a classroom laboratory. Please post your questions about assignments there, as you would ask them publically in the classroom. I monitor the discussion threads and offer comments when necessary, but more importantly, consider the discussion board a key way to connect with your classmates and share your discoveries.

Required Readings and Supplementary Materials

Textbooks – There are two required texts for this course. The first and second books by Esri Press can be purchased from online outlets such as Amazon, accessed via VitalSource.com or purchased from the USC Bookstore. The third book by Campbell is optional but recommended for those who have not taken SSCI 588 or a previous remote sensing course. It can be purchased from the USC Bookstore or online outlets such as Amazon.

- Green, K., Congalton, R.G., and Tukman, M., 2017. *Imagery and GIS – Best Practices for Extracting Information from Imagery.* Redlands, California, Esri Press. (Required)
- Keranen, K, and Kolvoord, R., 2017. *Making Spatial Decisions Using ArcGIS Pro: A Workbook.* Redlands, 1st edition. Redlands, California, Esri Press. (Required)
- Campbell, J.B., 2011. *Introduction to Remote Sensing,* 5th edition. New York, Guilford Press. (Optional)

These textbooks will be supplemented with Course Notes and a mixture of readings from academic journals, professional reports and authoritative websites.

Supplemental Readings **–** The following book chapters and journal articles will be posted to D2L under Course Documents (additional articles may be added as the semester progresses):

- Belgiu, M. and Csillik, O., 2018. Sentinel-2 cropland mapping using pixel-based and object-based time-weighted dynamic time warping analysis. *Remote Sensing of Environment,* 204, 509-523.
- Blaschke, T., Hay, G.J., Kelly, M., Lang, S., Hofmann, P., Addink, E., … Tiede, D., 2014. Geographic Object-Based Image Analysis: Towards a new paradigm. *ISPRS Journal of Photogrammetry and Remote Sensing,* 87, 180-191.

- Benkelman, C., 2015. Ingesting, Managing, and Using UAV (Drone) Imagery in the ArcGIS Platform, Version 2. Esri draft document.
- Boyd, D.S. and Danson, F.M., 2005. Satellite remote sensing of forest resources: Three decades of research development. *Progress in Physical Geography* 29: 1-26.
- Burnett, C. and Blaschke, T., 2003. A multi-scale segmentation/object relationship modeling methodology for landscape analysis. *Ecological Modelling* 168: 233-249.
- Carter, J., Schmid, K., Waters, K., Betzhold, L., Hadley, B., Mataosky, R. and Halleran, J., 2012. Lidar 101: An Introduction to Lidar Technology, Data, and Applications. National Oceanic and Atmospheric Administration (NOAA) Coastal Services Center, Charleston, South Carolina. *Charleston, SC*.
- Clark, R.N., 1999. Spectroscopy of rocks and minerals, and principles of spectroscopy. *Manual of remote sensing*, *3*(3-58), pp.2-2.
- Claverie, M., Ju, J., Masek, J. G., Dungan, J. L., Vermote, E. F., Roger, J.-C., Skakun, S. V., and Justice, C., 2018. The harmonized Landsat and Sentinel-2 surface reflectance data set. *Remote Sensing of Environment,* 219, 145-161.
- Colomina, I. and Molina, P., 2014. Unmanned aerial systems for photogrammetry and remote sensing: A review. *ISPRS Journal of photogrammetry and remote sensing*, *92*, pp.79-97.
- Deilami, K., Kamruzzaman, Md., and Liu, Y., 2018. Urban heat island effect: A systematic review of spatio-temporal factors, data, methods, and mitigation measures. *International Journal of Applied Earth Observation and Geoinformation,* 67, 30-42.
- Frantz, D., Haß, E., Uhl, A., Stoffels, J., and Hill, J., 2018. Improvement of the Fmask algorithm for Sentinel-2 images: Separating clouds from bright surfaces based on parallax effects. *Remote Sensing of Environment,* 215, 471-481.
- Gao, F. and Zhang, X., 2021. Mapping Crop Phenology in Near Real-Time Using Satellite Remote Sensing: Challenges and Opportunities. *Journal of Remote Sensing*, *2021*.
- Gilliespie, T.W., Chu, J., Frankenberg, E., and Thomas, D., 2007. Assessment and prediction of natural hazards from satellite imagery. *Progress in Physical Geography* 31: 459470.
- Hansen, Matthew C., and Thomas R. Loveland., 2012. A review of large area monitoring of land cover change using Landsat data. *Remote sensing of Environment* 122: 66-74.
- Huang, Huabing, Yanlei Chen, Nicholas Clinton, Jie Wang, Xiaoyi Wang, Caixia Liu,

Peng Gong et al., 2017. Mapping major land cover dynamics in Beijing using all Landsat images in Google Earth Engine. *Remote Sensing of Environment* 202: 166-176.

- Kakaes, K.A., Greenwood, F., Lippincott, M., Dosemagen, S., Meier, P. and Wich, S., 2015. Drones and aerial observation: new technologies for property rights, human rights, and global development. A primer. *New America*, pp.6-103.
- Kang, J., Körner, M., Wang, Y.-Y., Taubenböck, H., and Zhu, X.X., 2018. Building instance classification using street view images. *ISPRS Journal of Photogrammetry and Remote Sensing,* 145(Part A), 44-59.
- Kanjir, U., Greidanus, H., and Oštirca, K., 2018. Vessel detection and classification from spaceborne optical images: A literature survey. *Remote Sensing of Environment,* 207, 1- 26.
- Kokaly, R.F., Clark, R.N., Swayze, G.A., Livo, K.E., Hoefen, T.M., Pearson, N.C., Wise, R.A., Benzel, W.M., Lowers, H.A., Driscoll, R.L., and Klein, A.J., 2017. USGS Spectral Library Version 7: U.S. Geological Survey Data Series 1035, 61 p., https://doi.org/10.3133/ds1035.
- Kross, A., McNairn, H., Lapen, D., Sunohara, M., and Champagne, C., 2015. Assessment of RapidEye vegetation indices for estimation of leaf area index and biomass in corn and soybean crops. *International Journal of Applied Earth Observation and Geoinformation,* 34, 235-248.
- Kulbacki, M., Segen, J., Knieć, W., Klempous, R., Kluwak, K., Nikodem, J., Kulbacka, J. and Serester, A., 2018. Survey of drones for agriculture automation from planting to harvest.

  In *2018 IEEE 22nd International Conference on Intelligent Engineering Systems (INES)* (pp. 000353-000358). IEEE.
- Lewis, A., Oliver, S., Lymburner, L., Evans, B., Wyborn, L., Mueller, N. … Wang, L.-W., 2017. The Australian Geoscience Data Cube: Foundations and lessons learned. *Remote Sensing of Environment,* 202, 276-292.
- National Academies of Sciences, Engineering, and Medicine, 2019. *Thriving on our changing planet: A decadal strategy for Earth observation from space*. National Academies Press.
- Mishra, S., 2017. Unsupervised learning and data clustering. *URL: https://towardsdatascience. com/unsupervised-learning-and-data- clusteringeeecb78b422a*.
- Nguyen, Uyen NT, Lien TH Pham, and Thanh Duc Dang, 2019. "An automatic water detection approach using Landsat 8 OLI and Google Earth Engine cloud computing to map lakes and reservoirs in New Zealand." *Environmental monitoring and assessment* 191, no. 4: 1-12.

- Planet, 2018. Gaining energy insights from satellite imagery. URL: https://info.planet.com/ebook-data-driven-energy-insights-from-satellite-imagery/
- Rashed, T., Weeks, J.R., and Gadalla, M.S., 2001. Revealing the anatomy of cities through spectral mixture analysis of multispectral satellite imagery: A case study of the Greater Cairo region, Egypt. *Geocarto International* 16: 5-16.
- Reuter, R., 2012. SEOS-Earsel's project on science education through earth observation for high schools SEOS. *Ambiência*, *8*(4), pp.583-590.
- Rochon, Gilbert L., Joseph E. Quansah, Souleymane Fall, Bereket Araya, Larry L. Biehl, Thierno Thiam, Sohaib Ghani, Lova Rakotomalala, Hildred S. Rochon, Angel Torres Valcarcel, Bertin Hilaire Mbongo, Jinha Jung, Darion Grant, Wonkook Kim, Abdur Rahman M. Maud, and Chetan Maringanti., 2010. Remote Sensing, Public Health & Disaster Mitigation. *Geospatial Technologies in Environmental Management*, Geotechnologies and the Environment 3: 187-209.
- Sharifi, Ali., 1999. "Remote sensing and decision support systems." In *Spatial Statistics for Remote Sensing*, pp. 243-260. Springer, Dordrecht.
- Wang, R., Peethambaran, J., and Chen, D., 2018. LiDAR point clouds to 3-D urban models: A review. *IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing,* 11(2), 606-627.

Description and Assessment of Assignments

Weekly Assignments

There are several different kinds of assignments with at least one due weekly. These are described in the Weekly Folders on D2L. Due dates are shown in the summary that follows.

Resume Assignment – 1 worth total of 2 points. We require all current students to post and maintain a public resume, short biography and recent photo on our shared SSI Student Community Blackboard site. Please prepare your resume in the SSI template which will be provided to you. Unless you opt out, your resume will be included in the Spatial Sciences Institute Graduate Programs Resume Book. This resume book is compiled annually and, along with our web presence, is used to promote our programs, and more importantly, your skills, experience and professional aspirations.

R*eading Assignments - 7 worth total of 21 points* – Each student is required to complete all reading assignments for this class. The reading assignments will focus on the theory portion of the course as presented in the weekly readings. The objective of the reading is to help you evaluate and integrate the information you have acquired from the course readings. Some of these will involve discussions and collaborative work and some will be individual efforts.

Exercises - 9 worth total of 36 points – These will be scheduled throughout the semester and will require you to work through various individual exercises during the weeks they are

assigned. To demonstrate that you have completed all parts of the exercises, you will have specific deliverables which you will turn in as a digital output or brief text response.

Research Reports

Three assignments will provide students an opportunity to integrate learning from various aspects of the course through the practice of a more in-depth assignment.

First Report - 1 worth 10 points – The first report will provide you with an opportunity to describe the data capture options and challenges for a project of your choice from a variety of domains.

Second Report - 1 worth 20 points – The second report will build on the data capture part of the course by providing students an opportunity to integrate all that they have learned in the semester by executing a specific remote sensing chain of analysis with professional deliverable.

Presentation - 1 worth 11 points –This assignment will require some independent thought and synthesis and allow you to explore a case study of your choice. Results will be presented via Zoom in the week preceding the finals exam.

Grading Breakdown

Careful planning and a serious, consistent commitment will be required for you to successfully navigate the various deliverables in this and other GIST courses. The table below summarizes the SSCI 576 course assignments and their point distribution:

Assignments	Number	Points	Total Points
Weekly Assignments			
Exercises	9	4	36
Reading/Forum Assignments	7	3	21
Resume Assignment	1	2	2
Project Components			
First Research Report	1	10	10
Second Research Report	1	20	20
Presentation	1	11	11
Totals	**19**	**-**	**100**

Assignment Submission Policy

Unless otherwise noted, all assignments must be submitted via D2L *by 11:59 pm Pacific Time (PT) on due dates specified in* the Course Schedule below. Your attention to on-time assignment submission is essential if I am to meet my goal to return comments on your submitted assignments before the next one is due. Sometimes this is impossible, so I will post a notice on anticipated delays if needed.

Strict penalties apply for late assignments as follows:

- All assignments will be penalized 2 points up to FOUR days late. No points will be given for submissions more than FOUR days late. Note that all assignments worth 2 points will receive 0 points if submitted late.
- Additionally, no written work will be accepted for grading after 5 pm PT on the last day of classes.

Any exceptions to these turn-in assignments are only made by me in coordination with individual students. An example of an exception would be a student's illness or injury that reasonably prohibits course involvement/participation.

Schedule

	Topic	Readings and Assignments	Deliverables and Due dates
Module 1: Principles of Remote Sensing			
Week 1 8/22	**Discovering Imagery, Part I:** Introduction to Imagery and Thinking About the Possibilities.	Green 1, 2; Reuter (2012) (optional); Campbell 1, 2 (optional)	Resume Assignment Due: 8/29
Week 2 8/29	**Discovering Imagery, Part II:** Imagery Fundamentals and Choosing and Accessing the Right Imagery	Green 3, 4	Reading Assignment 1 Exercise 1 Due: 9/5
Week 3 9/5 (9/5 is a university Holiday)	**Using Imagery:** Working with Imagery and Imagery Processing	Green 5, 6	Exercise 2 Due: 9/12
Module 2: Data to Decisions			

Week 4 9/12	**Extracting Information from Imagery, Part I:** Importance of the Classification Scheme; Linking Variation in the Imagery to Variation on the Ground; Unsupervised Classification	Green 7, 9, 10; Mishra (2017) (optional)	Reading Assignment 2 Exercise 3 Due: 9/19
Week 5 9/19	**Extracting Information from Imagery, Part II:** Supervised Classification; Accuracy Assessment; Introduction to Esri Notebooks	Green 12; Campbell 14 (optional)	Exercise 4 Coding Exercise (optional) Due: 9/26
Week 6 9/26	**Extracting Information from Imagery, Part III:** Object-Based Classification; Change Detection	Green 11	Reading Assignment 3 Exercise 5 Due: 10/3
Module 3: Multidimensional Data			
Week 7 10/3	**LIDAR:** Processing LIDAR Image Data; Digital Elevation Models	Green 8; Carter et. al (2012); Campbell 8 (optional)	Exercise 6 Due: 10/10
Week 8 10/10 (10/13-10/14 is a university holiday)	**Hyperspectral and Advanced LIDAR:** Spectral Libraries; Slope and Aspect	Retuer (2012); Campbell 15	Reading Assignment 4 Exercise 7 Due: 10/17
Week 9 **10/17**	**Point Clouds:** Unmanned Aerial Systems (drones); 3D Object Classification	Colomina and Molina (2014); Kakaes et. al (2015); Benkelman (2015)	Exercise 8 Due: 10/24
Week 10 **10/24**	**SpatioTemporal Data:** High-Cadence Earth Observatories (SmallSats); Time-Series and On-the-Fly Analysis	Reuter et. al (2012); Pasquarella et. al (2016);	Exercise 9 Reading Assignment 5 Due: 10/31
Module 4: Emerging Applications in Remote Sensing			
Week 11 10/31	**Applications – Part I:** Plant Sciences; Ecological Forecasting; Agriculture and Food Security	Kulbacki et. al (2018); Campbell 17 (optional)	Report 1 Due: 11/7

Week 12 11/7 (11/11 is a university holiday)	**Applications – Part II:** Earth Sciences; Energy	Clark (1999); Campbell 18; Planet (2018)	Reading Assignment 6 Due: 11/14
Week 13 11/14	**Applications – Part III and IV:** Hydrospheric Sciences; Land Use and Land Cover; Google Earth Engine	Hansen and Loveland (2011); Huang et. al (2017); Nguyen et. al (2019)	Coding Exercise (optional) Due: 11/21
Week 14 11/21 (11/23-11/27 is a university holiday)	**Applications – Part V:** Global Remote Sensing; Humanitarian	Li (2015); National Academy of Sciences (2019)	Reading Assignment 7 Due: 11/28
Week 15 11/28 (Class ends on 12/2)	**Applications – Part VI:** Decision Support Systems; Remote Sensing enabled Dashboards	Sharifi (1999); Gao and Zhang (2021)	Project Presentation Due: 12/1
Week 16 12/5	**Final Course Project**	None	Report 2 Due: 12/9

Statement on Academic Conduct and Support Systems

Academic Conduct

Plagiarism – presenting someone else's ideas as your own, either verbatim or recast in your own words – is a serious academic offense with serious consequences. Please familiarize yourself with the discussion of plagiarism in SCampus in Part B, Section 11, "Behavior Violating University Standards" policy.usc.edu/scampus-part-b. Other forms of academic dishonesty are equally unacceptable. See additional information in SCampus and university policies on Research and Scholarship Misconduct.

Students and Disability Accommodations

USC welcomes students with disabilities into all of the University's educational programs. The Office of Student Accessibility Services (OSAS) is responsible for the determination of appropriate accommodations for students who encounter disability-related barriers. Once a student has completed the OSAS process (registration, initial appointment, and submitted documentation) and accommodations are determined to be reasonable and appropriate, a

Letter of Accommodation (LOA) will be available to generate for each course. The LOA must be given to each course instructor by the student and followed up with a discussion. This should be done as early in the semester as possible as accommodations are not retroactive. More information can be found at osas.usc.edu. You may contact OSAS at (213) 740-0776 or via email at osasfrontdesk@usc.edu

Support Systems

Counseling and Mental Health - (213) 740-9355 – 24/7 on call
studenthealth.usc.edu/counseling
Free and confidential mental health treatment for students, including short-term psychotherapy, group counseling, stress fitness workshops, and crisis intervention.

National Suicide Prevention Lifeline - 1 (800) 273-8255 – 24/7 on call
suicidepreventionlifeline.org
Free and confidential emotional support to people in suicidal crisis or emotional distress 24 hours a day, 7 days a week.

Relationship and Sexual Violence Prevention Services (RSVP) - (213) 740-9355(WELL), press "0" after hours – 24/7 on call
studenthealth.usc.edu/sexual-assault
Free and confidential therapy services, workshops, and training for situations related to gender-based harm.

Office for Equity, Equal Opportunity, and Title IX (EEO-TIX) - (213) 740-5086
eeotix.usc.edu
Information about how to get help or help someone affected by harassment or discrimination, rights of protected classes, reporting options, and additional resources for students, faculty, staff, visitors, and applicants.

Reporting Incidents of Bias or Harassment - (213) 740-5086 or (213) 821-8298
usc-advocate.symplicity.com/care_report
Avenue to report incidents of bias, hate crimes, and microaggressions to the Office for Equity, Equal Opportunity, and Title for appropriate investigation, supportive measures, and response.

The Office of Student Accessibility Services (OSAS) - (213) 740-0776
osas.usc.edu
OSAS ensures equal access for students with disabilities through providing academic accommodations and auxiliary aids in accordance with federal laws and university policy.

USC Campus Support and Intervention - (213) 821-4710
campussupport.usc.edu
Assists students and families in resolving complex personal, financial, and academic issues adversely affecting their success as a student.

Diversity, Equity, and Inclusion - (213) 740-2101
diversity.usc.edu
Information on events, programs and training, the Provost's Diversity and Inclusion Council, Diversity Liaisons for each academic school, chronology, participation, and various resources for students.

USC Emergency - UPC: (213) 740-4321, HSC: (323) 442-1000 – 24/7 on call
dps.usc.edu, emergency.usc.edu
Emergency assistance and avenue to report a crime. Latest updates regarding safety, including ways in which instruction will be continued if an officially declared emergency makes travel to campus infeasible.

USC Department of Public Safety - UPC: (213) 740-6000, HSC: (323) 442-120 – 24/7 on call
dps.usc.edu
Non-emergency assistance or information.

Office of the Ombuds - (213) 821-9556 (UPC) / (323-442-0382 (HSC)
ombuds.usc.edu
A safe and confidential place to share your USC-related issues with a University Ombuds who will work with you to explore options or paths to manage your concern.

*Occupational Therapy Faculty Practice - (323) 442-33*40 or otfp@med.usc.edu
chan.usc.edu/otfp
Confidential Lifestyle Redesign services for USC students to support health promoting habits and routines that enhance quality of life and academic performance.

Resources for Online Students

The Course D2L page and the GIST Community Blackboard page have many resources available for distance students enrolled in our graduate programs. In addition, all registered students can access electronic library resources through the link https://libraries.usc.edu/. Also, the USC Libraries have many important resources available for distance students through the link: https://libraries.usc.edu/faculty-students/distance-learners. These include instructional videos, remote access to university resources, and other key contact information for distance students.