

## GRADUATE COUNCIL: NEW COURSE PROPOSAL

**Originating Unit:**

**Type of action:**      New course      Full online course\*\*

**Semester and year course will take effect:**

**New course title:**

**Appropriate computer abbreviation (30 spaces or less):**

**Course instructional methodology:**

course component types: [ugradcouncil.tcu.edu/forms/Course Component Types.pdf](http://ugradcouncil.tcu.edu/forms/Course%20Component%20Types.pdf)

**New course number:**

**Prerequisites for new course:** *include an attachment if additional space is needed*

**Description of new course (catalog copy):** *include an attachment if additional space is needed*

attached files can be seen and managed in Acrobat Pro by clicking on  
View > Show/Hide > Navigations Panes > Attachments

## **Fully Online Courses\*\***

All online courses, and /or distance learning offerings must meet State Compliance regulations as defined by specific state legislation. TCU Distance Learning is any for-credit instruction provided to a TCU student outside the State of Texas. This includes internships, clinical, video conferencing, online, or any other delivery format that crosses state lines. Contact the Koehler Center for Teaching Excellence for guidelines. Include a letter of support from the Koehler Center with this proposal.

**Supporting evidence or justification:** (For a new course, attach proposed syllabus, including course objectives, course outline, and representative bibliography.)

**Describe the intended outcomes of the course and how they will be assessed:** *include an attachment if additional space is needed*

attached files can be seen and managed in Acrobat Pro by clicking on  
View > Show/Hide > Navigations Panes > Attachments

**Additional resources required:**

**Faculty:**

**Space:**

**Equipment:**

**Library:**

**Financial Aid:**

**Other:**

**Change in teaching load:**

**Does this change affect any other units of the University?**      Yes      No

*If yes, submit supporting statement signed by chair of affected unit.*


**If cross-listed, provide evidence of approval by all curriculum committees appropriate to both the originating and the cross-listed units.**

**Chair of Originating Unit:**

**Name:** Jeff Stratman

**Unit:** INSC

**Signature:** **Jeff Stratman**

 Digitally signed by Jeff Stratman  
Date: 2022.09.15 13:37:55 -05'00'

# GIS: Analytics for Interactive Mapping to Solve Business Problems

## INSC 71140 (1.5 credit hours)

Professor: Laura Meade, Ph.D.

Office: Neeley 3250

Office Phone: 817-257-7036; Cell Phone 817-800-2655

Office Hours: T/TH 11:00-12:30; 3:30-4:00 pm and by appointment.

E-Mail: [L.Meade@tcu.edu](mailto:L.Meade@tcu.edu)

All emails usually answered within 24 hours M-F.

---

### TCU Mission Statement

To educate individuals to think and act as ethical leaders and responsible citizens in the global community.

### The Neeley Mission Statement

- To develop ethical leaders with cutting-edge business competencies and a global perspective who help shape the business environment.
- To develop and disseminate leading-edge thought to improve the practice of business and contribute to the greater good.

### The Neeley Promise

The Neeley School of Business unleashes human potential with leadership at the core and innovation in our spirit.

## Final Exam Date & Other Important Dates

### Final Delivery Due Date & Other Important Dates

- **Project Presentations Sunday, Dec. 19<sup>th</sup>**
- **Final Individual write-up Due Monday, Dec 27<sup>th</sup> 8:00 am**

## Course Description

### Learning Outcomes

Learn GIS – a mapping and business analysis tool for applying geospatial analytics to your business practices. Gain greater insights using contextual tools to manage, visualize and analyze your data as you collaborate and share via maps, dashboards and reports. Specifically, GIS is an online geographic information system and is used to solve a variety of issues in many disciplines including data visualization, location analysis, environmental, social and corporate governance (ESG) and network design. Through a series of tutorials and a team-based project learn to connect people, locations and data using layers of information.

## Students will do the following:

- Complete tutorials on the essentials of GIS and state-of-the-art geospatial technology and web mapping techniques.
- Complete ESG transparency project
- Conduct a current state analysis of Tesla's Gigafactory locations.
- Present results from multi-country and multi-city analysis based on GIS tools.
- Define a current business problem and present solution based on GIS analytical tools including multiple layer analysis, suitability analysis and infographics.
- Reflect and summarize how geographic information systems can enhance a selected discipline or profession.

## Prerequisites

Graduate Student currently enrolled in the Neeley School of Business

## Required Texts / Materials

Access to ArcGIS as TCU student (TCU has a site license)

Essentials of Geographic Information Systems" version 2.1 by Michael, Shin, Jonathan Campbell, and Nick Burkhart. Published by FlatWorld.

- [Our website](#), where they can purchase an ebook, with student supplements, for \$29.95. This link will take them directly to the materials for the course: <https://students.flatworldknowledge.com/course/2598857>
- When the student visits the site, via the direct link <https://students.flatworldknowledge.com/course/259885> can also opt to purchase a downloadable or a print copy of the book at our website.

## Reference Materials

### Databases

STAT.USA, NTDB (National Trade Data Bank), (Available through TCU Library's On-line Resources)

### Websites

The U.S. Government Export Portal (<http://www.export.gov/>)

U. S. Customs and Border Protection (<http://www.customs.gov/>)

Lloyd's Register Fairplay World Shipping Directory (<http://directory.fairplay.co.uk/>)

International Chamber of Commerce (<http://www.iccwbo.org/>)

International Trade Association (<http://www.ita.doc.gov/>)

U.S. Census Bureau (<http://www.census.gov/foreign-trade/top>)

<http://hbr.org/hbrg-main/resources/pdfs/extras/javidan.pdf> (cornucopia of international business resources)

Real Clear: Editorialists and writers from around the English-speaking world  
[www.realclearworld.com](http://www.realclearworld.com)

Daily Telegraph: <http://www.telegraph.co.uk/> (generally Eurosceptic point of view)

©TCU Version 6 (8/22)

The Economist: [www.economist.com](http://www.economist.com) (Another British publication, but a bit more moderate than the Daily Telegraph)

## Teaching Philosophy

*“The real challenge in college teaching is not covering the material for the students; it’s uncovering the material **with** the students” Karl Smith, 1994*

### Instructional Methods

This course is an intensive weekend course and is designed around INTERACTIVE discussions, readings, tutorials and team projects. Therefore, attendance and participation are critical success factors for learning. Since this is an intermester course, NO LATE WORK will be accepted.

### TECHNOLOGY

**TCU ONLINE:** This course uses D2L (TCU’s Online format) this is where assignments will be turned in and class sessions and presentations.

### Grading

#### Final Grade Elements / Grade Breakdown:

| Outcome(s)   | Assignments, Exams/Quizzes, Presentations, etc.   | Percentage |
|--|---|------------|
| Complete tutorials on the essentials of GIS and state-of-the-art geospatial technology and web mapping techniques.   | <b>Individually</b> complete assigned tutorials   | 10 %       |
| Conduct ESG transparency and traceability analysis   | <b>Individually</b> complete sourcing materials responsibly analysis  | 15%        |
| Conduct a current state analysis of Tesla’s Gigafactory locations  | <b>Individually</b> complete current location analysis (Phase 1 and 2)  | 10%        |
| Present results from multi-country and multi-city analysis based on GIS tools.   | <b>Team</b> presentation of 3 country analysis and Mexico city analysis (Phase 3)   | 20%        |
| Define a current business problem and present solution based on GIS analytical tools including multiple layer analysis, suitability analysis and infographics. | <b>Team</b> presentation implementing GIS tools, including suitability analysis and infographics to solve current business problem. | 20%        |

| Outcome(s)   | Assignments, Exams/Quizzes, Presentations, etc. | Percentage |
|--|---|------------|
|  |   |            |
| Reflect and summarize how geographic information systems can enhance a selected discipline or profession | Final <b>Individual</b> Paper                   | 25%        |

## GRADING

**Instructions for Tutorials and TESLA project are in D2L.**

### **GROUP FINAL PROJECT PRESENTATION**

This project assignment is purposefully designed to be vague so use your imagination and creativity. ArcGIS is a powerful tool designed to help solve for a myriad of business issues. Your project **MUST** contain the following elements:

1. Problem Statement
2. Utilization of the following in ArcGIS
  - a. Mapping of layers
  - b. Import of some external data (via spreadsheet)
  - c. Suitability Analysis
  - d. Infographic
3. At least 4 different maps
4. What GIS solved for your business problem and what it cannot solve.
5. Final Conclusion

Grading Rubric is posted in D2L under the “Final Project” module

*(There are MANY more databases available when analyzing an issue within the United States; i.e. where to locate a Farm to Table Restaurant in Dallas – income, education, traffic patterns, availability of suppliers, access to workers, weather, location of EV charging stations...etc. )*

Explore and use data layers in ArcGIS Online and Living Atlas as had to do for current locations of Tesla Megafactories)

### **Individual Final Reflection on GIS and how it can enhance a selected discipline or profession**

Analytical tools are becoming more and more prevalent in the workplace. Select and specific discipline or profession and summarize how geographic information systems can be used for a competitive advantage. Please use headings in your write-up and limit it to 4 pages including figures and bibliography. Your report must contain the following:

1. **Introduction:** Description of specific profession or discipline you are analyzing.
2. **Geographic Information Systems:** Discussion of the current state of adoption of geospatial technology and web mapping in selected profession/discipline. Provide at least three examples.
3. **Suggestions for Future:** Expert suggestions as to how GIS could be used in selected profession/discipline.
4. **Conclusion:** Include how taking this course will help you in your chosen career path



6. **Bibliography:** Cite and incorporate in your discussion at least 6 sources.

### Grading Scales

| Grade | Score   | Grade | Score   |
|-------|---------|-------|---------|
| A     | 94–100  | C     | 74–76.9 |
| A-    | 90–93.9 | C-    | 70–73.9 |
| B+    | 87–89.9 | F     | 0–69.9  |
| B     | 84–86.9 |       |         |
| B-    | 80–83.9 |       |         |
| C+    | 77–79.9 |       |         |

All final grades will be rounded to the nearest tenth.

### Late Work

No late work will be accepted unless prior arrangements have been made with the professor.

### Grading Concerns

If you have a question about your grade on an assignment you must contact me in person or via email within 48 hours of receiving my feedback.

## INFORMATION YOU MAY NEED

### Syllabus Disclosures

### Fall 2022

#### Technology Policies

##### Email

Only the official TCU student email address will be used for all course notification. It is your responsibility to check your TCU email on a regular basis.

##### Course Materials

TCU students are prohibited from sharing any portion of course materials (including videos, PowerPoint slides, assignments, or notes) with others, including on social media, without written permission by the course instructor. Accessing, copying, transporting (to another person or location), modifying, or destroying programs, records, or data belonging to TCU or another user without authorization, whether such data is in transit or storage, is prohibited. The full policy can be found at: <https://security.tcu.edu/polproc/usage-policy/>.

©TCU Version 6 (8/22)

**Violating this policy is considered a violation of Section 3.2.15 of the Student Code of Conduct** (this policy may be found in the Student Handbook at <https://tcu.codes/code/index/>), **and may also constitute Academic Misconduct or Disruptive Classroom Behavior** (these policies may be found in the undergraduate catalog at <https://tcu.smartcatalogiq.com/current/Undergraduate-Catalog/Student-Policies/Academic-Conduct-Policy-Details>). TCU encourages student debate and discourse; accordingly, TCU generally interprets and applies its policies, including the policies referenced above, consistent with the values of free expression and First Amendment principles.

---

## Academic Misconduct

Academic Misconduct (Sec. 3.4 from the [TCU Code of Student Conduct](#)): Any act that violates the academic integrity of the institution is considered academic misconduct. The procedures used to resolve suspected acts of academic misconduct are available in the offices of Academic Deans and the Office of Campus Life and are also listed in detail in the [Undergraduate Catalog](#) and the [Graduate Catalog](#). Specific examples include, but are not limited to:

- **Cheating:** Copying from another student's test paper, laboratory report, other report, or computer files and listings; using, during any academic exercise, material and/or devices not authorized by the person in charge of the test; collaborating with or seeking aid from another student during a test or laboratory without permission; knowingly using, buying, selling, stealing, transporting, or soliciting in its entirety or in part, the contents of a test or other assignment unauthorized for release; substituting for another student or permitting another student to substitute for oneself.
- **Plagiarism:** The appropriation, theft, purchase or obtaining by any means another's work, and the unacknowledged submission or incorporation of that work as one's own offered for credit. Appropriation includes the quoting or paraphrasing of another's work without giving credit therefore. *[If you are using Turnitin, place information about your course ID/password or state that items will be checked as part of the TCU Online assignment submission process. If you want to use Turnitin as a spot check, indicate that you may use Turnitin for plagiarism detection.]*
- **Collusion:** The unauthorized collaboration with another in preparing work offered for credit.
- **Abuse of resource materials:** Mutilating, destroying, concealing, or stealing such material.
- **Computer misuse:** Unauthorized or illegal use of computer software or hardware through the TCU Computer Center or through any programs, terminals, or freestanding computers owned, leased or operated by TCU or any of its academic units for the purpose of affecting the academic standing of a student.
- **Fabrication and falsification:** Unauthorized alteration or invention of any information or citation in an academic exercise. Falsification involves altering information for use in any academic exercise. Fabrication involves inventing or counterfeiting information for use in any academic exercise.
- **Multiple submission:** The submission by the same individual of substantial portions of the same academic work (including oral reports) for credit more than once in the same or another class without authorization.
- **Complicity in academic misconduct:** Helping another to commit an act of academic misconduct.

- **Bearing false witness:** Knowingly and falsely accusing another student of academic misconduct.

### **Class Norms & Netiquette**

All members of the class are expected to follow rules of common courtesy in all email messages, discussions, and chats. If I deem any of them to be inappropriate or offensive, I will forward the message to the Chair of the department and appropriate action will be taken, not excluding expulsion from the course. The same rules apply online as they do in person. Be respectful of other students. Foul discourse will not be tolerated. Please take a moment and read the [basic information about netiquette](http://www.albion.com/netiquette/) (<http://www.albion.com/netiquette/>).

Participating in the virtual realm, including social media sites and shared-access sites sometimes used for educational collaborations, should be done with honor and integrity. Please [review TCU's guidelines on electronic communications](#) (email, text messages, social networks, etc.) from the Student Handbook. (<https://tcu.codes/policies/network-and-computing-policy/e-mail-electronic-communications-social-networks/>)

## **TCU Online: Our Learning Management System**

Getting Started with TCU Online

**Technical Requirements:** Check your computer is ready by looking at the [specifications list](https://community.brightspace.com/s/article/Brightspace-Platform-Requirements). (<https://community.brightspace.com/s/article/Brightspace-Platform-Requirements>)

**Log In:** (using your TCU Network Credentials)

Option 1: Access via [my.tcu.edu](http://my.tcu.edu) > Student Quick Links > TCU Online

Option 2: Login at <http://d2l.tcu.edu>

\*For information about logging into TCU Online, view these [instructions](http://tcuonline.tcu.edu/kb/how-do-i-log-in/) (<http://tcuonline.tcu.edu/kb/how-do-i-log-in/>).

**Student Orientation Tutorial for TCU Online:** If you have not yet taken the TCU Online Student Orientation Tutorial, please do so now. To access it, click on the Orientations semester OR view all courses in your My Courses widget visible upon logging in to TCU Online. Click on the "Student Orientation Tutorial" to enter the orientation course. Follow the instructions in the course. You can return to this tutorial at any time.

Getting Help with TCU Online

If you experience any technical problems while using TCU Online, please do not hesitate to contact the TCU Online (D2L) Help Desk. They can be reached by phone or chat 24 hours a day, 7 days a week, 365 days a year.

**Phone: 1-877-325-7778**

**Chat:** Chat is available within TCU Online in the Help menu on the navigation bar.

*If you are working with the Help Desk to resolve a technical issue, make sure to keep me updated on the troubleshooting progress.*

If you have a course-related issue (course content, assignment troubles, quiz difficulties) please contact me.

## Personal Settings & Notifications for TCU Online

As a student, you should set up your account settings, profile, and notifications. To do this you will login to TCU Online and select your name on the top right of the screen. In the Profile area, you can upload a photo of yourself and add personal information. In the Notifications area, you can add your phone number to receive text messages when grades are given as well as reminder texts for upcoming assignments and quizzes.

## Student Success Tools for TCU Online

### **Pulse**

[Pulse](#) is a phone app which gives you access to the course calendar, assignments, grades, and announcements. This app provides a graph that can help you manage your time. Based on the number of assignments and events on the course calendar for your classes, the graph will display busy times for class work in the upcoming week. You can use this app to manage your daily workload, and it includes the ability to view and access course materials offline. You can download Pulse from the Google Play or Apple Store. You can learn more and download Pulse here: <https://www.d2l.com/products/pulse/>.

### **ReadSpeaker**

[ReadSpeaker](#) includes a number of tools that can enhance your understanding and comprehension of course materials. ReadSpeaker can create an audio version of content that you can listen to while on a page within a course or that you can download to listen offline. ReadSpeaker can also read Microsoft Office files and PDFs. There are additional tools and features to assist you with reading and focusing in TCU Online, tools that provide support for writing and proofing text, and tools that can read non-TCU Online content aloud. You can learn more about how to use ReadSpeaker tools here: <https://tcuonline.tcu.edu/how-to-hub/instructor-how-to-hub-for-tcu-online/integrations-and-mobile/readspeaker/>

## **Support for TCU Students**

### Campus Offices

- Academic Advising (817-257-7486, Jarvis 104)
- Brown-Lupton Health Center (817-257-7938 or 817-257-7940)
- Center for Digital Expression (CDeX) (cdex@tcu.edu, Scharbauer 2003)
- Center for Writing (817-257-7221, Reed Hall 419)
- Counseling & Mental Health Center (817-257-7863, Jarvis Hall 2<sup>nd</sup> floor)
- Dean of Students (817-257-7926, the Harrison 1600)
- Mary Couets Burnett Library: Reference Desk (817-257-7117)
- Office of Religious & Spiritual Life (817-257-7830, Jarvis Hall 1<sup>st</sup> floor)

- Student Access & Accommodations (817-257-6567, The Harrison 1200)
- Student Success (817-257-8345, Samuelson Hall, West Entrance)
- Substance Use and Recovery Services (817-257-7100, Jarvis Hall 2<sup>nd</sup> floor)
- Transfer Student Center (817-257-8345, Samuelson Hall, West Entrance)
- Veterans Services (817-257-5551, Jarvis Hall 2<sup>nd</sup> floor)

## Anti-Discrimination and Title IX Information

### Statement on TCU's Non-Discrimination Policy

TCU is committed to providing a positive learning, living, and working environment free from unlawful discrimination, harassment, sexual misconduct, and retaliation. In support of this commitment, in its policy on Prohibited Discrimination, harassment, sexual misconduct and retaliation, TCU has a range of prohibited behaviors, including unlawful discrimination and harassment and related sexual and other misconduct based on age, race, color, religion, sex, sexual orientation, gender, gender identity, gender expression, national origin, ethnic origin, disability, predisposing genetic information, covered veteran status, and any other basis protected by law. The **Office of Institutional Equity (OIE)** is responsible for responding to all reports of discrimination, harassment, sexual misconduct and retaliation.

Please use the following links to review [TCU Policy 1.008 Prohibited Discrimination, Harassment, Sexual Misconduct and Retaliation](#) or to review [TCU Policy 1.009 Responding to Reports of Prohibited Discrimination, Harassment, Sexual Misconduct, and Retaliation](#).

To make a report, you may call OIE at 817-257-8228, email [oie@tcu.edu](mailto:oie@tcu.edu), visit us at The Harrison, Suite 1800 or click here: [Make a Report](#).

To learn about the [Campus Community Response Team \(CCRT\) and Report a Bias Incident](#) click here: <https://inclusion.tcu.edu/campus-community-response-team/>

### Title IX

TCU's Title IX Coordinator works within OIE. Andrea Vircks-McDew serves as TCU's Title IX Coordinator. You may call 817-257-8228 to make a report, email [oie@tcu.edu](mailto:oie@tcu.edu) or [a.vircks@tcu.edu](mailto:a.vircks@tcu.edu), or make a report [here](#). Additional Title IX resources and information are available at <https://www.tcu.edu/institutional-equity/title-ix/index.php>.

### Mandatory Reporters

ALL TCU employees, except confidential resources, are considered Mandatory Reporters. Mandatory reporters are required to immediately report to OIE any conduct that raises Discrimination, Harassment, Sexual Misconduct (Title IX or Violence Against Women (VAWA)) or Retaliation. Mandatory reporters cannot promise to refrain from forwarding the information to OIE.

## **Confidential On-Campus Resources**

Campus Advocacy, Resources & Education

[www.care.tcu.edu](http://www.care.tcu.edu) | 8147-257-5225

Counseling & Mental Health Center

[www.counseling.tcu.edu](http://www.counseling.tcu.edu) | 817-257-7863

Religious & Spiritual Life

[www.faith.tcu.edu](http://www.faith.tcu.edu) | 817-257-7830

## **On Campus Resources**

TCU Police

[www.police.tcu.edu](http://www.police.tcu.edu) | 817-257-8400 Non-emergency | 817-257-7777 Emergency

## TCU Policy for Religious Observations & Holidays

“Students who are unable to participate in a class, in any related assignment or in a university required activity because of the religious observance of a holy day shall be provided with a reasonable opportunity to make up the examination or assignment, without penalty, provided that it does not create an unreasonable burden on the University.” For more information, please visit the [TCU Policy for Religious Observations & Holidays](#) webpage.

## Student Access and Accommodation

Texas Christian University affords students with disabilities reasonable accommodations in accordance with the Americans with Disabilities Act and Section 504 of the Rehabilitation Act. To be eligible for disability-related academic accommodations, students are required to register with the TCU Office of Student Access and Accommodation and have their requested accommodations evaluated. If approved for accommodations, students are required to discuss their official TCU Notification of Accommodation with their instructors. Accommodations are not retroactive and require advance notice to implement. The Office of Student Access and Accommodation is located in The Harrison, Suite 1200. More information on how to apply for accommodations can be found at <https://www.tcu.edu/access-accommodation/> or by calling Student Access and Accommodation at (817) 257-6567.

### **Audio Recording Notification:**

Audio recordings of class lectures may be permitted by the instructor or as an approved disability accommodation through Student Access and Accommodation. Recordings are not to be shared with other students, posted to any online forum, or otherwise disseminated.

## Emergency Response Information

View [TCU's L.E.S.S. is More public safety video](#) to learn about Lockdown, Evacuate, and Seek Shelter procedures. (<https://publicsafety.tcu.edu/less-is-more/>)

View the [TCU Building Safety Maps](https://publicsafety.tcu.edu/less-safety-maps/) that show the specific seek shelter locations and building rally points for evacuation. (<https://publicsafety.tcu.edu/less-safety-maps/>)

View the [TCU Evacuation Rally Point Map](https://publicsafety.tcu.edu/wp-content/uploads/2020/01/TCU-Rally-Point-Map.pdf) to see all rally points for evacuation. (<https://publicsafety.tcu.edu/wp-content/uploads/2020/01/TCU-Rally-Point-Map.pdf>)

Download the [Frogshield Campus Safety App](https://police.tcu.edu/frogshield/) on your phone. (<https://police.tcu.edu/frogshield/>).

In the event of an emergency, call the TCU Police Department at **817-257-7777**.

## COURSE SCHEDULE

This calendar represents my current plans and objectives. As we go through the course, those plans may need to change to enhance the class learning opportunities. Such changes will be clearly communicated.

| Friday 12/23   | Saturday(12/24)   | Sunday(12/25)  | Monday(12/26)                     |
|--|---|--|-----------------------------------|
| 6:00-8:00 pm<br>Introduction to Geographic Information Systems | 8:00 – 9:00 am work on Tutorials<br><br>9:00 am Tutorials Due<br><br>9:00 -12:00 pm ESG Lecture and Introduce Transparency and Traceability exercise  | 8:00 am – 10:00 am<br><br>10:00 am – 12:00 pm Complete Tesla Project<br><br>Lecture on ArcGIS Business Analyst Web App | Individual write-up due (8:00 am) |
| 8:00-10:00 pm<br>work on tutorials                             | 1:00-2:00 pm Lecture on adding layers<br><br>2:00 -Work on Tesla Project (3 phases)<br><br>3:30-4:00 Phase 1 Tesla due<br><br>Introduce Phase 2 Lecture on incorporating spreadsheets and datasets. | 1:00 – 1:30 pm<br><br>Introduce Group Final Project<br><br>1:30-5:00 Work on Group Project                             |                                   |
|  | 6:00 pm Tesla Phase 2 due   | 5:00 – 6:00 pm<br><br>Group Final Project Presentations  |                                   |





