THE OHIO STATE UNIVERSITY

GEOG 5212

Geospatial Databases for GIS (23432) Autumn 2026

Syllabus - Instructor Information

Chayanika Singh, GISP

Professional Qualifications

- PhD, Geographic information Sciences, Texas State University, USA
- Graduate Certificate in Geographic Information Systems, University of Wisconsin - Milwaukee, USA
- Masters in Urban Planning, School of Planning & Architecture, New Delhi, India
- Bachelors in Architecture, School of Planning & Architecture, New Delhi, India

Syllabus - Required or Recommended Readings

No specific textbook is required for this course. There will be several references given to you from various web sources (such as YouTube links, tutorials, podcasts... etc) to expand your learnings of different topics covered but not extensively described in this course.

Other Readings: Excerpts from the following texts will be provided in digital (PDF) format on Carmen:

- B: Bolstad, P. (2019). GIS Fundamentals, 6th edition.
- CM: Coronel, C. & Morris, S. (2016). Database Systems: Design, Implementation, and Management, 12th edition.

- EN: Elmasri, R. & Navathe, S. (2016). Fundamentals of Database Systems, 7th edition.
- N: Nasser, H. (2014). Learning ArcGIS Geodatabases.
- OH: Obe, R. & Hsu, L. (2015). PostGIS in Action, 2nd edition.
- R+: Rigaux, P., Scholl, M., & Voisard, A. (2002). Spatial Databases with Application to GIS.
- RG: Ramakrishnan, R. & Gehrke, J. (1999) Database Management Systems, 2nd edition.
- SC: Shekhar, S. & Chawla, S. (2003) Spatial Databases: A Tour.
- WD: Worboys, M. & Duckham, M. (2004) GIS: A Computing Perspective, 2nd edition.
- Z: Zeiler, M. (2010) Modeling Our World: The ESRI Guide to Geodatabase Concepts, 2nd edition.

Syllabus - Course Schedule

Week	Topic
week 1	Course Overview
week 2	SQL Basics
week 3	Spatial Databases
week 4	Conceptual modeling
week 5	Logical modeling
week 6	Object Orientation concept
week 7	Spatial Objects
week 8	Project overview
week 9	Physical modeling
week 10	DBMS Architectures
week 11	NoSQL database
week 12	AI & Ethics in Database management
week 13, 14	Final Exam & Project work
week 15, 16	Project Deliverables

Syllabus - University Policies

Office of Undergraduate Education - Standard Syllabus Statements

- Academic Misconduct
- Religious Accommodations
- Accommodations for Disability and Illness
- Intellectual Diversity
- Grievances and Solving Problems
- Creating an Environment Free from Harassment, Discrimination, and Sexual Misconduct
- Copyrights
- Content Warnings
- Mental Health Support
- Resources for Military-Connected Students
- Campus-wide Class Cancellations