

PreGISP Blueprint Companion

A Student-Friendly Guide to the PreGISP Examination Blueprint

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Understand the concepts. Connect the ideas. Build your GIS foundation.

Welcome to PreGISP

The PreGISP credential recognizes emerging geospatial professionals who have demonstrated a solid understanding of foundational GIScience concepts. This companion is designed to help you understand what the blueprint covers and organize your preparation.

The examination is concept-based rather than software-specific. You may use ArcGIS Pro, QGIS, or another platform in your coursework, but the exam focuses on principles that remain relevant as technology changes.

This is not a study guide! This companion document is designed to refresh your memory, or inspire you to go back to your textbook or syllabus for a refresher.

The big idea: You do not need to memorize software menus or every definition. Focus on understanding why concepts matter, when methods are appropriate, and how GIS ideas connect.

How to Read the Blueprint

The percentages show the approximate emphasis of each domain on the examination. They are not a ranking of what matters most in the GIS profession. You should develop understanding across the entire blueprint, while giving additional study time to the higher-weighted areas.

Domain	Weight	Study priority
Analytical Methods & Geocomputation	18%	High
Conceptual Foundations	14%	High
Data Modeling	12%	High
Geospatial Data	11%	High
Cartography & Visualization	10%	Moderate
Platforms, Sensors, Physical Principles & Image Processing	10%	Moderate
Design of Systems	8%	Moderate
Organizational & Institutional Aspects	7%	Moderate
Thematic & Application Domains	5%	Review
GI & Society	3%	Review
Web-Based GIS	2%	Review

The 11 Knowledge Domains

Use the pages that follow as a checklist for your understanding. If you can explain the ideas in your own words and connect them to examples from coursework or practice, you are building the kind of foundation PreGISP is intended to recognize.

1. Analytical Methods & Geocomputation

18% • High study priority

Be comfortable with:

- Spatial relationships and proximity
- Buffer and overlay analysis
- Raster and vector analytical models
- Network analysis
- Surface and terrain analysis
- Interpolation
- Suitability modeling
- Spatial statistics (conceptual)
- Geoprocessing, automation, and reproducibility

Ask yourself: Think about why a method is appropriate, what assumptions it makes, and how results should be interpreted.

Primary resource: <https://geospacebok.eu/AM> • <https://geospacebok.eu/GC>

2. Conceptual Foundations

14% • High study priority

Be comfortable with:

- Spatial thinking and geographic representation
- Coordinate reference systems and projections
- Scale and resolution
- Spatial relationships
- Topology
- Accuracy, precision, and uncertainty
- Geographic abstraction and modeling

Ask yourself: Think about how geographic concepts influence data collection, analysis, and visualization.

Primary resource: <https://geospacebok.eu/CF>

3. Data Modeling

12% • High study priority

Be comfortable with:

- Conceptual, logical, and physical data models
- Entities, attributes, feature classes, and tables
- Relationships, keys, and normalization
- Domains and attribute validation
- Metadata and documentation

- Data integrity and quality assurance
- Enterprise databases and geodatabases (conceptual)

Ask yourself: Think about how information is organized so it can be stored, maintained, analyzed, and shared effectively.

Primary resource: <https://geospacebok.eu/DM>

4. Geospatial Data

11% • High study priority

Be comfortable with:

- Vector and raster data
- Primary and secondary data sources
- Metadata and documentation
- Accuracy, precision, and resolution
- Completeness, consistency, and currency
- Interoperability
- Coordinate reference systems
- Open, public, and proprietary data
- Data stewardship and lifecycle

Ask yourself: Think about whether a dataset is fit for the purpose—not simply whether it is available.

Primary resource: <https://geospacebok.eu/GD>

5. Cartography & Visualization

10% • Moderate study priority

Be comfortable with:

- Map purpose and audience
- Visual hierarchy and symbolization
- Color and classification
- Labeling, typography, and generalization
- Scale, legends, layout, and composition
- Interactive visualization, dashboards, and web maps
- Communicating uncertainty and accessibility

Ask yourself: Think about how design choices affect what an audience sees, understands, and concludes.

Primary resource: <https://geospacebok.eu/CV>

6. Platforms, Sensors, Physical Principles & Image Processing

10% • Moderate study priority

Be comfortable with:

- Remote sensing
- Active and passive sensors
- Satellite, aircraft, drone, and terrestrial platforms
- GNSS and LiDAR fundamentals
- Electromagnetic energy and spectral signatures

- Spatial, spectral, temporal, and radiometric resolution
- Image acquisition and calibration
- Orthorectification, enhancement, classification, and feature extraction
- DEMs and uncertainty

Ask yourself: Focus on what a technology observes, what its data represent, its limitations, and when it is appropriate.

Primary resource: <https://geospacebok.eu/PS> • <https://geospacebok.eu/PP> • <https://geospacebok.eu/IP>

7. Design of Systems

8% • Moderate study priority

Be comfortable with:

- Systems thinking
- Business and technical requirements
- Stakeholders and user needs
- GIS architecture and enterprise GIS
- Scalability and workflow design
- Data management
- QA/QC, documentation, testing, and validation
- Implementation, maintenance, security, and lifecycle

Ask yourself: Think about people, processes, data, and technology together. Start with the problem, not the software.

Primary resource: <https://geospacebok.eu/DA>

8. Organizational & Institutional Aspects

7% • Moderate study priority

Be comfortable with:

- Organizational context and governance
- Policies, standards, and procedures
- Roles and responsibilities
- Data sharing and institutional collaboration
- Project and resource considerations
- Professional practice

Ask yourself: Think about how GIS operates within organizations and how governance and collaboration affect success.

9. Thematic & Application Domains

5% • Review study priority

Be comfortable with:

- Applications of GIS across disciplines
- Understanding the geographic problem
- Selecting appropriate data and methods for an application
- Interpreting results in context

Ask yourself: Think about how foundational GIS concepts transfer to real-world applications.

10. GI & Society

3% • Review study priority

Be comfortable with:

- Ethics and professional responsibility
- Privacy and confidentiality
- Access and equity
- Bias and representation
- Legal and policy considerations
- Societal impacts of geographic information

Ask yourself: Think about the responsibilities that come with collecting, analyzing, sharing, and communicating geographic information.

11. Web-Based GIS

2% • Review study priority

Be comfortable with:

- Web maps and web GIS concepts
- Geospatial services and data delivery
- Clients and servers
- Interoperability and standards
- Online applications and dashboards
- Security and performance (conceptual)

Ask yourself: Think about how geographic information is delivered to users through the web and what that requires.

How the Domains Connect

The blueprint is not a collection of unrelated subjects. GIS work brings these ideas together. A typical project may move from a geographic question, to data and data modeling, to analysis, to visualization and communication, within an organizational and societal context.

1. Define the geographic problem and understand the context.
2. Identify and evaluate appropriate geospatial data.
3. Organize and document the data so they can be trusted and maintained.
4. Select analytical methods that fit the question and the data.
5. Communicate results through effective maps and visualizations.
6. Consider how the work fits into systems, organizations, web environments, and society.

A Simple Study Strategy

- Start with your coursework. Review notes, labs, projects, and assignments.
- Give extra attention to the higher-weighted domains: Analytical Methods & Geocomputation, Conceptual Foundations, Data Modeling, and Geospatial Data.

- Use the Geospatial Body of Knowledge as a primary reference for the blueprint domains.
- Practice explaining concepts in your own words. If you can teach an idea to someone else, you probably understand it.
- Work with real data and real examples whenever possible.
- Review the moderate- and lower-weighted domains after you have a solid foundation in the higher-weighted areas.
- Do not study only by memorizing definitions. Ask: Why does this matter? When would I use it? What could go wrong?

Before You Test Yourself

- ☐ I can explain the major concepts in each blueprint domain without relying on software-specific terminology.
- ☐ I can describe when common GIS methods are appropriate and identify important limitations.
- ☐ I can evaluate whether geospatial data are fit for a particular purpose.
- ☐ I understand how data quality affects analysis and decision-making.
- ☐ I can explain how maps and visualizations influence interpretation.
- ☐ I understand that GIS involves people, processes, data, and technology—not just software.
- ☐ I can recognize ethical, societal, and organizational considerations in GIS work.
- ☐ I can connect concepts across multiple blueprint domains.

Final Thoughts

PreGISP is about building and recognizing a strong foundation in GIScience. Technology will change, software platforms will change, and the ways we collect and share geographic information will continue to evolve. The concepts behind good geographic reasoning remain essential.

Use this companion as a roadmap—not a textbook. Follow the blueprint, use your coursework and the Geospatial Body of Knowledge, practice applying what you learn, and keep asking one simple question:

“Why does this matter in GIS?”

This companion complements, but does not replace, the official PreGISP Examination Blueprint, academic coursework, or the Geospatial Body of Knowledge.