

**SEMESTER VIII**

**Geog 402.                      Digital Cartography                      Cr. Hours (03)**  
**BS Geography 4 Years Programme, University of the Punjab, Lahore**

- Spatial Analysis and Digital Image Processes (Practical).
- Quantitative Revolution and Digital Cartography
- Introduction to Visualization, Visualization Process, Visualization Strategies.
- Statistical and Visual Foundation
- Principles of Symbolization
- Principles of Color, Tri-Simulate(chromatic Model, Intensity, Hue and Saturation
- Map Design Process
- Mapping Techniques
- Cognitive, Social and Ethical Issues in Cartography and spatial data visualization
- Internet Mapping
- 3D Modeling
- Map Animation
- Virtual Reality
- Paradigm shift: 2D to 3D representation, (i.e. Digital Earth & Google Earth)
- Electronic Atlases and Multimedia Cartography
- Final Presentations

**Lab Outline and Practical**

- Exploration of visualization tools in digital environment, Thematic Mapping, Designing of point/nodes, line/arcs and area features/polygon symbols, Exercise: Color formation and Conversion (RGB, CMYK, IHS), Assignment: Cartographic Design and Reproduction (Example: Topographic Mapping), Mono, Bivariate and multivariate thematic Mapping, Assignment: War and Propaganda Maps, Map Server Application, Perspective Viewing, Multi-layer Draping and Fly Through, assignment.
- Assignments
- Exploration of visualization tools in digital environment
- Thematic Mapping both Raster/ Vector
- Designing of point/node, line/arc and area feature/polygon symbols
- Exercise: Color formation and Conversion (RGB, CMYK, IHS)
- Assignment: Cartographic Design and Reproduction (Example: Topographic Mapping)

BS Geography w.e.f. Academic Session 2018-2022 and onward

- Mono, Bivariate and multivariate thematic Mapping
- Assignment: War and Propaganda Maps
- Map Server Application
- Perspective Viewing, Multi-layer Draping and Fly Through
- 3D Visualisation Assignment and Seminar

**Books Recommended:**

1. Aronoff, S. (2004) "Geographic Information Systems: A Management Perspective", WDL Publications, Ottawa, Fifth edition.
2. Chang, Krang-tsung, (2002) "Introduction to Geographic Information Systems" McGraw Hill.
3. Ed Madej (2001) "Cartographic Design Using Arc View GIS", One Word Press, USA.
4. ITC (2000) "Principles of Geographic Information Systems" ITC Educational Textbook Series, Enschede, The Netherlands.
5. Kraak, M.J & Ormeling, F. (2004), "Cartography: Visualization of Spatial Data". Addison Wesley Longman. Second Edition.