SEMESTER VIII

Geog 402. Digital Cartography Cr. Hours (03)
BS Geography (5th to 8th Semester) 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)
- 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.