

# **GEOG. 435 DIGITAL CARTOGRAPHY**

**Credit/Hours: 3(2+1)**

## **Learning Objectives:**

To familiarize students with map-making science by the state-of-the-art modern information technology i.e. computer.

## **Course Content**

### **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 Colour, 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 Modelling
- 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: Colour 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: Colour 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:**

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

<b>Assessment</b>			
<b>Sr. No.</b>	<b>Elements</b>	<b>Weightage</b>	<b>Details</b>
1.	Midterm Assessment	35%	Written Assessment at the mid-point of the semester.
2.	Formative Assessment	25%	Continuous assessment includes Classroom participation, assignments, presentations, viva voce, attitude and behavior, hands-on-activities, short tests, projects, practical, reflections, readings, quizzes etc.
3.	Final Assessment	40%	Written Examination at the end of the semester. It is mostly in the form of a test, but owing to the nature of the course the teacher may assess their students based on term paper, research proposal development, field work and report writing etc.