

BS Geography 4 Years Programme, University of the Punjab, Lahore

- **Introduction to Cartography**
 - Nature and Scope of Cartography
 - History of Cartography
- **Basic Geodesy**
 - Spherical, Ellipsoidal and Geoidal Earth.
 - Geographical Coordinates.
 - Properties of the Graticule.
 - Geodetic position determination
- **Scale, Reference and Coordinate Systems**
 - Map Scale
 - Reference Systems
 - Coordinate systems

- Datum
- **Cartographic Symbols**
 - Symbol types and graphic variables,
 - The symbolization problem.
 - Symbolizing graphic features
- **Mapping Statistical Surfaces**
 - Form, Dimension and colour, Texture
 - Classification and generalization
- **Lettering**
 - Native of typography
 - Lettering methods
 - Types and type characteristics
 - Photo lettering and automatic Control lettering
- **Map Design**
 - General Design problems
 - Principles of Cartographic design
 - Design of map symbols
- **Basic procedure and designing of the following maps**
 - Topographic
 - Climatic
 - Economic
 - Settlements
 - Urban Morphology
- **Map Production**
 - Form of map output
 - Construction material
 - Output options
 - Composing separations
 - Proofing

Books Recommended:

1. Bygot, J. (revised by Money); 1960 An Introduction to Map Work & Practical Geography, , Tutorial Press London.
2. Debenham, F. Exercises in Cartography, Black Blackie & Sons London.
3. Garnet, A.; 1935 Geographical Interpretation of Topographical Maps, London
BS Geography w.e.f. Academic Session 2018-2022 and onward

4. Kraak, M.J. & Ormelling, F.J.; 1996 Cartography: Visualization of Spatial Data Longman, Harlow.
5. Keats, J.S.; 1973 Cartographic Design and Production Longman, London.
6. Lawrence, G.R.P.; 1971 Cartographic Methods, Methuen & Co., London.
7. Monkhouse F.J. & Wilkinson, H.R. Maps and Diagrams, Methuen London.
8. Riasz Erwin General Cartography, McGraw Hill New York.
9. Robinson, A. N. Elements of Cartography, John Wiley New York.
10. Steers, J.A. An Introduction to the Study of Map Projections, London, University of Press London.
11. Threlfall, H.; 1946 A Text-Book on Surveying and Leveling-Map Charles, Riffin London
12. Usil, G.W. & Hearn G.; 1947 Practical Surveying, Technical Press London.