2.13.6 Description of Module 06

2.13.6.1. Module Code: STU08106

2.13.6.2. Module Name: Applied Spatial Statistics

2.13.6.3. Number of Credits: 9

2.13.6.4 Sub-enabling outcomes:

6.5.1 Describe concepts of GIS as used in solving statistical problems

6.5.2 Use GPS to capture spatial data

6.5.3 Use GIS software to perform different spatial data management

6.5.4 Use spatial statistics to assess socio-economic issues

2.13.6.6 Module Prerequisite: NONE

2.13.6.6 Learning Context:

The course is based on classroom lectures, guided independent work, practical demonstrations where needed, study visit, assignments, and tests. The course is planned to be interactive and the emphasis will be on learning by doing.

2.13.6.7. Learning Materials:

Handouts, national development plans, internet materials and text books

2.13.6.8. Integrated Method of Assessment:

Continuous Assessment: 40%

Semester Examinations: 60%

2.13.6.9. References:

2.13.6.9.1 **Required Readings:**

1. Bailey and Gatrell, (1995). Interactive Spatial Data Analysis.
2. Bivand, R. S., Pebesma, E. J. and Gómez-Rubio, V. (2009). Applied Spatial Data Analysis with R (Use R).
3. Chang, K.-T. (2018). *Introduction to geographic information systems* (NINTH EDIT). New York: McGraw Hill Education.

4. Cliff, A. and Ord, J.K. (1981). Spatial Processes, Models and Applications. London: Pion.
5. Cressie, A. C. N. (1993). Statistics for Spatial Data
6. Fazal, S. (2008). *Gis basics*. New Delhi: New Age International(P) Limited.
7. Haining, R. (2003). Spatial Data Analysis: Theory and Practice.
8. Kennedy, H. (2000). *Dictionary of GIS Terminology*. Calofornia: ESRI Press.
9. QgisProject. (2018). *QGIS User Guide Release 2.18*.
10. Crosier, S., Booth, B., Dalton, K., Mitchell, A., & Clark, K. (2005). *ArcGIS 9: Getting Started With ArcGIS*. Computer. Retrieved from www.esri.com,

2.13.6.9.2 **Recommended Readings:**

11. Graham J. Upton & Bernard Fingelton: Spatial Data Analysis by Example Volume 1: Point Pattern and Quantitative Data John Wiley & Sons, New York. 1985.
12. Knegt, De; Coughenour, M.B.; Skidmore, A.K.; Heitkönig, I.M.A.; Knox, N.M.; Slotow, R.; Prins, H.H.T. (2010). "Spatial autocorrelation and the scaling of species–environment relationships". *Ecology*
13. Koroleva, E. V., & Nikitin, Y. Y. (2014). Principles of Geographic Information Sysyem. Journal of Multivariate Analysis. https://doi.org/10.1016/j.jmva.2014.02.006
14. Kreveld, M. Van, Neyer, G., Schirra, S., Rickenbach, R., Wagner, F., Widmayer, P., & Wol, A. (1997). Geographic Information Systems (Vol. 1). https://doi.org/10.1007/978-0-387-35973-1_467 Thiede, R., Sutton, T., & Sutton, M. (2014). Quantum GIS Training Manual.