Course Instructor: Dr Chiranjib Sur

Course Webpage: https://chiranjibsuruf.github.io/courses/da205.html

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Objectives:

Prerequisites:

Course Code: DA205

Course Name: Data Mining and Warehousing

Credits: 3-0-0-6

Syllabus: Introduction: Definitions, Review of basics of data analysis, applications; Data Warehousing: Definition, architectures, dimensional modeling and star schema, ETL (extract, transform, load) processes; Finding Similar Items: Similarity measures and distance metrics, Shingling and locality-sensitive hashing; Frequent Pattern Mining: Itemset, substring, sequence, pattern evaluation and interestingness measures; Graph Mining: Graph data and representations, link analysis, pattern mining, graph clustering techniques; Mining Data Streams: characteristics of data streams, sliding window models, approximate and sketching techniques, change detection and concept drift.

Textbooks:

- Han, Jiawei, Jian Pei, and Hanghang Tong, Data mining: Concepts and Techniques, 4th Edition, Morgan Kaufmann, 2022.

- Robinson, Ian, Jim Webber, and Emil Eifrem, Graph Databases: New Opportunities for Connected Data, 2nd Edition, O'Reilly Media, Inc., 2015.

- Ponniah, Paulraj, Data Warehousing Fundamentals for IT Professionals, 2nd Edition, John Wiley & Sons, 2012..

References:

- Jure Leskovec, Anand Rajaraman and Jeffrey David Ullman, Mining of Massive Datasets, 3rd Edition, Cambridge University Press, 2020.

- Kimball, Ralph, and Margy Ross, The Data Warehouse Toolkit: The Definitive Guide to Dimensional Modeling, Wiley, 2013.

- Reis, Joe, and Matt Housley, Fundamentals of Data Engineering, O'Reilly Media, Inc., 2022.