THE OHIO STATE UNIVERSITY

COLLEGE OF ENGINEERING

Data Management in the Cloud

CSE 3244

Credit Hours:
3.00

Course Levels:
Undergraduate (1000-5000 level)

Course Components:
Lecture

Course Description:
Systematic organization of data on cloud computing architectures; basic indexing techniques, including B-tree and hash-based indexing; fundamentals of query optimization, including access path selection and cardinality estimation; full and partial replication; data partitioning and distributed task scheduling.

Prerequisites and Co-requisites:
Prereq: 3241 or 5241; and 2421 or 3430; and enrollment in CSE, CIS, or Data Analytics majors.

Course Goals / Objectives:
- Master using fundamental concepts in indexing and optimization techniques, including B-trees, hash-based indexing and cardinality estimation
- Master using mechanisms of distributed data management, including full and partial replication strategies, data partitioning, fault tolerance models and consistency trade-offs
- Be competent with data warehousing techniques, including on-line analytical processing (OLAP)
- Be competent with distributed algorithms and task scheduling in cloud environments
- Be exposed to current cloud-based data management technologies

Course Topics:
- Review of relevant 3241/5241 Material
- Indexing and Optimization
- Data warehousing and OLAP
- Cloud computing principles
- Replication and partitioning strategies
- Algorithms and platforms for cloud

Designation:

Required
Elective