One of the major motivations behind the use of database systems is the desire to integrate the operational data of an enterprise and to provide centralized, thus controlled access to that data. The technology of computer networks, on the other hand, promotes a mode of work that goes against all centralization efforts. At first glance it might be difficult to understand how these two contrasting approaches can possibly be synthesized to produce a technology that is more powerful and more promising than either one alone. The key to this understanding is the realization that the most important objective of the database technology is integration, not centralization. It is important to realize that either one of these terms does not necessarily imply the other. It is possible to achieve integration without centralization, and that is what the distributed database technology attempts to achieve. In this course, we will discuss various such integration techniques. Another topic for this course is parallel database technology. For applications that require a system capable of sustaining trillions of operations per second on very large data sets (e.g., ‘Big Data’ and cloud database applications), parallel processing is the only solution. We will examine techniques available for implementing such systems, and discuss the following subjects:

- DBMS Internal
- Parallel Architectures for DBMSs
- Data Placement Strategies
- Parallel Algorithms
- Parallel DBMS Implementation Techniques
- Distributed DBMS Architectures
- Distributed Database Design
- Distributed Query Processing
- Multidatabase Systems
- Peer-to-Peer Systems
- Mobile Computing

Prerequisite: COP4710 or working knowledge of DBMSs.

Class Notes: Available at http://www.cs.ucf.edu/~kienhua/classes/

Class Time: Tuesday & Thursday, 6:00 - 7:15pm, Room HEC 103

Office Hours: Tuesday 5:00 ~ 5:50pm or by appointments

Grading Policy:
- Test 1 (Parallel DBMS’s) - 30% Critical Reviews - 20%
- Test 2 (Distributed DBMS’s) - 30% Project - 20% (+ extra credit)

NOTE: +/- grades will be used

Important Dates:
- Withdrawal deadline is Monday, October 30, 2017, 11:59PM
- Class ends on November 30, 2017
- Fall holidays are September 4, 2017 (Labor Day), November 10, 2017 (Veteran Day), and November 23-25 (Thanksgiving)