Overview and Topics: CSc630 is an advanced graduate course in database systems that will cover recent and on-going research issues. The focus will be on non-traditional large-scale database applications. The main topics that this course will investigate include (a subset of)

- spatial/multidimensional access methods, spatial join,
- indexing, searching and storage of multimedia databases,
- parallel databases: architectures, parallel join algorithms, data clustering/declustering,
- distributed databases: client/server, data distribution and replication,
- data warehousing: OLAP/ROLAP/MOLAP, aggregate, data cube,
- data mining: association rule discovery, statistical methods,
- internet: scalable web servers, digital library,
- tertiary memory issues.

This course will consist of lectures by the instructor and student presentations of research papers based on a reading list. The reading list will include recent research papers as well as classic, and is expected to evolve during the course reflecting the interests and accomplishments of the class.

Prerequisites: CSc342 (Data structures) and CSc460/560 (Database Systems); or instructor’s permission.

Recommended texts:
- Packet #1: article collection by the instructor.

Research projects: Students are required to complete a research project in small groups of two to four. A list of suggested projects will be provided. Students are also encouraged to pick up their own project topics provided that the topics are relevant to the course and challenging enough. All the project proposals are subject to the instructor’s approval. Projects will include extensive literature survey, prototype implementations, performance measurements, and several reports. The final reports of the projects should be of quality both in depth and breadth equivalent to refereed conference papers.

Grading: This course will be offered for three credits. The grading policy will be class participation (10%), midterm exam (30%) and project (60%). The instructor will reserve the right to fail for the course any student who fails the research project.

Class URL and newsgroup: [http://www.cs.arizona.edu/classes/cs630/spring98](http://www.cs.arizona.edu/classes/cs630/spring98); news.cs.course630
The class web page is the primary source for information on the projects and other important announcements. You may also use the class newsgroup to exchange questions and tips about the projects or to discuss any issues that arise in class.