

Syllabus for CSE 707SEM: Seminar on Modern Database Systems (Fall 2021)

Instructor: Zhuoyue Zhao, zzhao35@buffalo.edu, Davis Hall 338I.

Course website: https://cse.buffalo.edu/~zzhao35/teaching/cse707_fall121/

Location and Time: Davis Hall 338A. Every Wednesday 10:25 am to 12:30 pm.

Discussion, Q&A and assignment submission: <https://piazza.com/buffalo/fall12021/cse707/home>

Office hours: On demand. Please email me for appointments.

Course Material: No required textbook.

Optional readings: Readings in Database Systems, 5th Edition, by Peter Bailis, Joseph M. Hellerstein, and Michael Stonebraker. Available online at <http://www.redbook.io/>.

Course Description. Modern database systems have different designs compared to traditional RDBMS in many aspects. In this seminar, we will review and discuss a range of papers of modern database system designs. The topics will include query processing, transaction processing, indexing and storage, and etc. Students will participate in the seminar course by presenting, discussing and writing short summaries of select papers in these topics.

Course Objective. To understand the challenges in designing modern database design and learn the techniques to solve them. To learn when each specific technique or system may be used and what trade-offs were made in those systems. To practice technical presentation skills.

Prerequisites. Students should have taken CSE 462/562 Database Systems or equivalents.

Course Requirements.

- Complete the required reading before each lecture.
- Write a short summary (at most 1 page) of the paper(s) presented in each lecture. It should summarize the problem solved, the assumptions made, the technical contributions, the trade-offs made and/or possible alternative approaches. The summary is due every Tuesday, 11:59 pm (1 day before the next lecture). No late submission will be accepted.
- Present one of the selected papers throughout the semester. You are encouraged but not required to post the slides before the day of presentation - and we will post a link to your slides on the course website if you do.

Grading Policy.

- 70% for the short summaries.
5% for each summary submitted ($14 \times 5\% = 70\%$). You may skip the summary for the paper you present with no penalty.
- 30% for the presentation.

The seminar is graded in S/U. Satisfactor is score $\geq 75\%$ and unsatisfactory is score $< 75\%$.

Course Schedule. Find the latest schedule on the course website.

Academic Integrity.

Students may discuss the papers before writing the summaries but not what specific contents to write in the summaries. Students are expected to write the summaries independently, based on papers, presentation and/or discussion. Simply paraphrasing other's work is treated plagiarism and any plagiarism will result in an F grade. The slides for the paper presentation may be based on existing works of others (e.g., the conference talk slides from the paper authors), as long as there are proper citations and acknowledgments.

Academic integrity is critical to the learning process. It is your responsibility as a student to complete your work in an honest fashion, upholding the expectations your individual instructors have for you in this regard. The ultimate goal is to ensure that you learn the content in your courses in accordance with UB's academic integrity principles, regardless of whether instruction is in-person or remote. Thank you for upholding your own personal integrity and ensuring UB's tradition of academic excellence. Departmental and university policies on academic integrity may be found at <https://engineering.buffalo.edu/computer-science-engineering/information-for-students/academics/academic-integrity.html>.

Accessibility Resources. If you have any disability which requires reasonable accommodations to enable you to participate in this course, please contact the Office of Accessibility Resources in 60 Capen Hall, 716-645-2608 and also the instructor of this course during the first week of class. The office will provide you with information and review appropriate arrangements for reasonable accommodations, which can be found on the web at: <http://www.buffalo.edu/studentlife/who-we-are/departments/accessibility.html>.

Counseling Services. As a student you may experience a range of issues that can cause barriers to learning or reduce your ability to participate in daily activities. These might include strained relationships, anxiety, high levels of stress, alcohol/drug problems, feeling down, health concerns, or unwanted sexual experiences. Counseling, Health Services, and Health Promotion are here to help with these or other concerns. You learn can more about these programs and services by contacting: Counseling Services: 120 Richmond Quad (North Campus), phone 716-645-2720

202 Michael Hall (South Campus), phone: 716-829-5800

Health Services: Michael Hall (South Campus), phone: 716- 829-3316

Health Promotion: 114 Student Union (North Campus), phone: 716- 645-2837

Sexual Violence. UB is committed to providing a safe learning environment free of all forms of discrimination and sexual harassment, including sexual assault, domestic and dating violence and stalking. If you have experienced gender-based violence (intimate partner violence, attempted or completed sexual assault, harassment, coercion, stalking, etc.), UB has resources to help. This includes academic accommodations, health and counseling services, housing accommodations, helping with legal protective orders, and assistance with reporting the incident to police or other UB officials if you so choose. Please contact UB's Title IX Coordinator at 716-645-2266 for more information. For confidential assistance, you may also contact a Crisis Services Campus Advocate at 716-796-4399.