**DSO 553 and NoSQL Databases in Big Data (1.5 credits)**

**Fall 2018 — Thursday — 6:30-930pm:**

**Arsames Qajar**

**Location:** JFF 236

**Instructor:**

**Office:** BRI 303E

**Office Hours:** 2-4pm Thursdays

**Contact Info:** Slack or email: [qajar@usc.edu](mailto:qajar@usc.edu)

**Course Description**

This course will prepare students on current and emerging practices for dealing with big data and different data type including structured, unstructured and semi-structure data. It covers the fundamental knowledge and industry practices and use cases for retrieving and dealing with Big data in this emerging space of NoSQL data warehousing solutions. The course will explore the origins of NoSQL databases and the characteristics that distin-guish them from traditional relational databases. Core concepts of NoSQL databases will be presented, followed by an exploration of how different database technologies imple-ment these core concepts. All core concepts of the course will be We will cover MongoDB, Neo4j, Hbase and Cassandra.

**Learning Objectives**

* Understand how to construct queries
* Describe general theory behind different data warehousing solutions
* Determine the right data warehousing solution a use case or dataset
* Explain and evaluate data retrieval from a multitude of data warehousing solutions at a deep level
* Construct complex queries to retrieve and manipulate data
* Be comfortable switching between data warehousing solution and talking about data from different angles
* Learn to discuss different database structures in a meaningful way with industry professionals/guest speakers

**Prerequisite(s):** DSO 552

**Course Notes:** Grades will be posted on blackaboard.

**Technological Proficiency and Hardware/Software Required**

Must have access to a laptop for class and homework.

**Required Readings and Supplementary Materials**

All required readings are available for FREE (yes, free ☺) through USC library.

**Grading Breakdown:**

|  |  |  |
| --- | --- | --- |
| **Assignment** | **Points** | **% of Grade** |
| Participation | 42 | 15 |
| Final | 154 | 55 |
| Homework (7 Homeworks each worth 12 points) | 84 | 30 |
| **TOTAL** | **280** |  |

**Grading Scale (Example)**

Course final grades will be determined using the following scale

A 95-100

A- 90-94

B+ 87-89

B 83-86

B- 80-82

C+ 77-79

C 73-76

C- 70-72

D+ 67-69

D 63-66

D- 60-62

F 59 and below

**Assignment Submission Policy**

Assignment must be turned in before the due time and uploaded to Piazza course management system and email TA. Late assignment will receive 10% deduction for every day it is late. (for example, homework 1 worth 100 points. If your grade is 94, you will receive 84 if late up to one day) If you have difficulties in complete the assignment, seeking for help ahead of time.

**Grading Timeline**

Grading for homework will be within 5 days of due date. Any grading disputes should be brought to my attention within 3 days of grades returned/posted.

**Participation**

Class participation is a combination of in and out of class contribution to engage with the material and make the class better. 4 point scale in class and 3 point scale outside of class.

3 Point System in class

* 0 points for absence (unless given permission
* 1 point for showing up
* 2 points for asking questions
* 3 points for contributing/answering questions

3 Point System outside of class

* 1.5 points for slack engagement with students
* 1.5 points for survey

**Course Schedule: A Weekly Breakdown –**

**Additional Information**

**Academic Conduct:**

Plagiarism – presenting someone else’s ideas as your own, either verbatim or recast in your own words – is a serious academic offense with serious consequences. Please familiarize yourself with the discussion of plagiarism in *Campus* in Part B, Section 11, “Behavior Violating University Standards” [policy.usc.edu/scampus-part-b](https://policy.usc.edu/scampus-part-b/). Other forms of academic dishonesty are equally unacceptable.  See additional information in *SCampus*and university policies on scientific misconduct, <http://policy.usc.edu/scientific-misconduct>.

**Grade Disputes**

All grades assigned by faculty members are final. Students have the right to seek explanation,

guidance, counsel and reasons for the assignment of a grade. Faculty may initiate

a change in grade if there is an error in the calculation of a grade. Students may appeal a

grade according to university policy as set forth in Campus. A faculty member may not

change a disputed grade outside the formal appeals process. In response to a disputed

academic evaluation by an instructor, a student is entitled to two levels of appeal after review

by the instructor: first to the chairperson of the department and then to the appropriate

dean of the school. The full university policy can be found in SCampus under Uni

**Support Systems:**

*Student Counseling Services (SCS) – (213) 740-7711 – 24/7 on call*

Free and confidential mental health treatment for students, including short-term psychotherapy, group counseling, stress fitness workshops, and crisis intervention. [engemannshc.usc.edu/counseling](https://engemannshc.usc.edu/counseling)

*National Suicide Prevention Lifeline – 1 (800) 273-8255*

Provides free and confidential emotional support to people in suicidal crisis or emotional distress 24 hours a day, 7 days a week. [www.suicidepreventionlifeline.org](http://www.suicidepreventionlifeline.org/)

*Relationship and Sexual Violence Prevention Services (RSVP) – (213) 740-4900 – 24/7 on call*

Free and confidential therapy services, workshops, and training for situations related to gender-based harm. [engemannshc.usc.edu/rsvp](https://engemannshc.usc.edu/rsvp/)

*Sexual Assault Resource Center*

For more information about how to get help or help a survivor, rights, reporting options, and additional resources, visit the website: [sarc.usc.edu](http://sarc.usc.edu/)

*Office of Equity and Diversity (OED)/Title IX Compliance – (213) 740-5086*

Works with faculty, staff, visitors, applicants, and students around issues of protected class. [equity.usc.edu](http://equity.usc.edu/)

*Bias Assessment Response and Support*

Incidents of bias, hate crimes and microaggressions need to be reported allowing for appropriate investigation and response. [studentaffairs.usc.edu/bias-assessment-response-support](https://studentaffairs.usc.edu/bias-assessment-response-support/)

*Students with Disabilities/Learning Differences*

The Office of Disability Services and Programs (www.usc.edu/disability) provides certification

for students with disabilities and helps arrange the relevant accommodations. Any

student requesting academic accommodations based on a disability is required to register

with Disability Services and Programs (DSP) each semester. A letter of verification for approved

accommodations can be obtained from DSP. Please be sure the letter is delivered

to me (or to your TA) as early in the semester as possible. DSP is located in GFS (Grace

Ford Salvatori Hall) 120 and is open 8:30 a.m.–5:00 p.m., Monday through Friday. The

phone number for DSP is (213) 740-0776. Email: [ability@usc.edu](mailto:ability@usc.edu).

*Student Support and Advocacy – (213) 821-4710*

Students whose primary language is not English should check with the American Language

Institute http://dornsife.usc.edu/ali, which sponsors courses and workshops specifically

for international graduate students. The Office of Disability Services and Programs

(www.usc.edu/disability) provides certification for students with disabilities and helps arrange

the relevant accommodations. If an officially declared emergency makes travel to

campus infeasible, USC Emergency Information (http://emergency.usc.edu/) will provide

safety and other updates, including ways in which instruction will be continued by means

of blackboard, teleconferencing, and other technology.

*Diversity at USC*

Information on events, programs and training, the Diversity Task Force (including representatives for each school), chronology, participation, and various resources for students. [diversity.usc.edu](https://diversity.usc.edu/)

*Emergency Preparedness/Course Continuity*

In case of a declared emergency if travel to campus is not feasible, the USC Emergency Information

web site (http://emergency.usc.edu/) will provide safety and other information, including

electronic means by which instructors will conduct class using a combination of

Blackboard, teleconferencing, and other technologies.

Please make sure you can access this course in Blackboard and retrieve the course syllabus

and other course materials electronically. You should check Blackboard regularly for

announcements and new materials. In the event of an emergency, the ability to access

Blackboard will be crucial. USC's Blackboard learning management system and support

information is available at blackboard.usc.edu.

*USC Department of Public Safety – UPC: (213) 740-4321 – HSC: (323) 442-1000 – 24-hour emergency or to report a crime.*

Provides overall safety to USC community. [dps.usc.edu](http://dps.usc.edu/)