San José State University
College of Engineering/Computer Engineering Dept
CMPE 274 Business Intelligence Technologies, Section 1, Fall 2020

Instructor:	Dr. Weider D. Yu
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Office Hours:	Wednesday 18:00 – 20:00 (Online)
Class Days/Time:	Tuesday 15:00 – 17:45 (Online Seminar)
Classroom:	Online
Prerequisites:	CMPE 272 or Instructor Consent

Faculty Web Page and MYSJSU Messaging

Some course materials such as the syllabus, reading assignment handouts, etc. may be found on my faculty web page at http://www.engr.sjsu.edu/wdyu. The email messages to notify the class will be sent out through MYSJSU.

Course Catalog Description

This course covers technologies that are keys to delivering business intelligence to an enterprise. The goal of business intelligence is to analyze and mine business data to understand and improve business performance by transforming business data into information into knowledge.

Program Outcomes

Course Goals and Student Learning Objectives

At the end of the course, the student will

1. Be able to explain concepts, practices, tools and methods related to the modern business intelligence and Big Data to develop quality software products and process on predictable schedule.

2. Be able to perform known and proven fundamental Big Data analytic and business intelligence methods and tasks related to some major applicable fields.

3. Be able to apply currently available modern data analytic tools, special analytic programming languages on the platforms of mobile computing, Web and Cloud Service Oriented Architecture (SOA).

4. Be able to design and implement a mobile, Web and Cloud based computing platforms using Mongo Database (non-relational) and SQL oriented database technology in developing software team projects, using disciplined and measured business intelligence and data analytic process.

Required Texts/Readings

Textbooks

1. *No required textbook.*
2. *Reading material will be provided in the class.*

References

1. *Online information reference.*
2. *Some required references are to be provided during the class.*

Classroom Protocol

Students are encouraged to concentrate in lectures to understand the principles in designing various system software types. The students are also encouraged to ask questions in the class.

All paper documents (homework, project report, and special topic) should be typed and referenced. Writing should be clear and correct.

The students in the class are required to have ability to program software components in C# programming language. Each student should have a laptop.

Dropping and Adding

Students are responsible for understanding the policies and procedures about add/drop, grade forgiveness, etc. Refer to the current semester's Catalog Policies section at http://info.sjsu.edu/static/catalog/policies.html. Add/drop deadlines can be found on the current academic calendar web page located at http://www.sjsu.edu/academic_programs/calendars/academic_calendar/. The Late Drop Policy is available at http://www.sjsu.edu/aars/policies/latedrops/policy/**.** Students should be aware of the current deadlines and penalties for dropping classes.

Information about the latest changes and news is available at the Advising Hub at http://www.sjsu.edu/advising/.

Assignments and Grading Policy

The grading percentages for the course work: lab/homework, exams, special topic report and team project, are as follows:

Course work components:

- Special Topic Report 20%
- Midterm 20%
- Final Exam 30%
- Team Project 30%

Late submission of assignments (homework or report) will have penalty. The penalty amount will be announced in the class.

Note: If a student is to miss an exam, the student needs to inform the instructor to obtain approval before the exam. An official physician statement will be required if the student is sick and cannot attend the exam.

In the following paragraphs, each course work component is explained:

Special Topic Report:
Each project team will choose a special topic in the context of systems software and perform an in-depth study and investigation. The report (~12 pages) includes analysis, findings, insights and suggestions of improvement to the problems/issues identified. The report is worth 20 percent of the course grade. The due date will be given during the class. A report template is given:

A list of areas for special topic reports is provided by the instructor. Each special topic team should select a specific topic in the area chosen and start to collect related source information and to explore potential problems/issues.

Project:
The project will have frequent checkpoints along the way for which you will have to turn in status reports, preliminary designs, and the like. The project will be worth about 30 percent of the course grade. The project specification will be distributed during the class.

A variety of project topics will be presented to the class. The team (4 students per team) will select one project topic. The students are allowed to use mobile computing

devices for the project. Each team is required to present and demonstrate the project, and submit a team project report in PowerPoint Presentation Slides (20-30 slides).

- Team Project: Requirement and User Scenario Analysis 5%
- Team Project: Software Design & System Performance 10%
- Team Project: PowerPoint Presentation Slides 15%

Schedule:
There is a final project presentation. No makeup presentation will be given, unless the case is critical. For the exceptional cases, documented reasons (e.g. physician's statement) are required.

- Project Milestone I 10/ 13/ 20
- Project Milestone II 11/ 17/ 20
- Final Project Review 12/ 08/ 20

University Policies

Academic integrity

Your commitment as a student to learning is evidenced by your enrollment at San Jose State University. The University's Academic Integrity policy, located at http://www.sjsu.edu/senate/S07-2.htm, requires you to be honest in all your academic course work. Faculty members are required to report all infractions to the office of Student Conduct and Ethical Development. The Student Conduct and Ethical Development website is available at http://www.sa.sjsu.edu/judicial_affairs/index.html.

Instances of academic dishonesty will not be tolerated. Cheating on exams or plagiarism (presenting the work of another as your own, or the use of another person's ideas without giving proper credit) will result in a failing grade and sanctions by the University. For this class, all assignments are to be completed by the individual student unless otherwise specified. If you would like to include your assignment or any material you have submitted, or plan to submit for another class, please note that SJSU's Academic Policy S07-2 requires approval of instructors.

Campus Policy in Compliance with the American Disabilities Act

If you need course adaptations or accommodations because of a disability, or if you need to make special arrangements in case the building must be evacuated, please make an appointment with me as soon as possible, or see me during office hours. Presidential Directive 97-03 requires that students with disabilities requesting accommodations must register with the Disability Resource Center (DRC) at http://www.drc.sjsu.edu/ to establish a record of their disability.

Student Technology Resources

Computer labs for student use are available in the Academic Success Center located on the 1st floor of Clark Hall and on the 2nd floor of the Student Union. Additional computer labs may be available in your department/college. Computers are also available in the Martin Luther King Library.
A wide variety of audio-visual equipment is available for student checkout from Media Services located in IRC 112. These items include digital and VHS camcorders, VHS and Beta video players, 16 mm, slide, overhead, DVD, CD, and audiotape players, sound systems, wireless microphones, projection screens and monitors.

Learning Assistance Resource Center

The Learning Assistance Resource Center (LARC) is located in Room 600 in the Student Services Center. It is designed to assist students in the development of their full academic potential and to motivate them to become self-directed learners. The center provides support services, such as skills assessment, individual or group tutorials, subject advising, learning assistance, summer academic preparation and basic skills development. The LARC website is located at http:/www.sjsu.edu/larc/.

SJSU Writing Center

The SJSU Writing Center is located in Room 126 in Clark Hall. It is staffed by professional instructors and upper-division or graduate-level writing specialists from each of the seven SJSU colleges. Our writing specialists have met a rigorous GPA requirement, and they are well trained to assist all students at all levels within all disciplines to become better writers. The Writing Center website is located at http://www.sjsu.edu/writingcenter/about/staff/.

Peer Mentor Center

The Peer Mentor Center is located on the 1st floor of Clark Hall in the Academic Success Center. The Peer Mentor Center is staffed with Peer Mentors who excel in helping students manage university life, tackling problems that range from academic challenges to interpersonal struggles. On the road to graduation, Peer Mentors are navigators, offering "roadside assistance" to peers who feel a bit lost or simply need help mapping out the locations of campus resources. Peer Mentor services are free and available on a drop –in basis, no reservation required. The Peer Mentor Center website is located at http://www.sjsu.edu/muse/peermentor/

CMPE 274 /Business Intelligence Technologies, Fall 2020, Course Schedule

The following class topic schedule is **subject to change**. The change announcement will be emailed to the class through MYSJSU messaging system in advance.

Table 1 Course Schedule

Week	Date	Topics, Readings, Assignments, Deadlines
1	__/__/20	Course Introduction, Business Intelligence Overview, Course Structure
2	__/__/20	Framework for Business Intelligence, Intro. to Big Data Technologies, Intelligence Creation and Use
3	__/__/20	Analytics Overview, Data Warehousing, Definitions and Concepts. DW Process Overview, Big Data.
4	__/__/20	DW Architecture, ETL Processes, DW Development and Implementation Issues, DW Administration and Security Issues
5	__/__/20	Business Reporting, Definitions and Concepts, Data and Information Visualization, Charts and Graphs, Emergence of Data Visualization and Visual Analytics
6	__/__/20	Performance Dashboard, Business Performance Management, Performance Measurement, Balance Scorecards, Six Sigma Performance Measurement System
7	__/__/20	Data Mining Concepts and Applications, Data Mining Process, Data Mining Methods
8	__/__/20	*Midterm*
9	__/__/20	Data Mining Software Tools, Data Mining Privacy issues, Big Data and Data Warehousing, Big Data and Stream Analytics, Application of Stream Analytics
10	__/__/20	Text Analytics and Text Mining, Text Mining Process, Sentiment Analysis, Search Engines, Development Cycles and Cases Study
11	__/__/20	Web Usage Mining, Social Analytics, Social Network Analytics, Web Analytics Metrics, Measuring Social Media Analytics
12	__/__/20	Emerging Trends and Future Impacts in Business Analytics, Online Social Networking
13	__/__/20	Cloud Computing and BI, Issues of Legality, Privacy and Ethics
14	__/__/20	Final Project Review

Week	Date	Topics, Readings, Assignments, Deadlines
15	__/__/20	Final Project Review , Project Packaging, Project Report Due
16	__/__/20	*Final Exam, Special Topic Report Due (Tue. in the university week).