

## **OMIS 34 – Science, Information Technology, Business and Society**

Fall 2020, Sep 21 – Dec 4

Class Time/Location: Section 19054 MWF 10:30 – 11:35am

<https://scu.zoom.us/j/94267220822?pwd=NlFyVG1sUWdnUDU0NFdYK210NXBnZz09>

Section 19058 MWF 1:00 – 2:05pm

<https://scu.zoom.us/j/93298365220?pwd=QndoRW9jYzllRGgzclBzQjZkZHBkdz09>

Section 19075 MWF 2:15pm – 3:20pm

<https://scu.zoom.us/j/96558507149?pwd=T0Z3OTdGcENDK25iSjNSNjYwWUg5QT09>

### **Professor Yaqiong (Joan) Wang**

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Office Hours: Friday 3:30-4:30pm and by appointment

<https://scu.zoom.us/j/92104264892?pwd=ZEp5aUtielpHNTk5U0hpVG1UMUFZZz09>

## **COURSE OVERVIEW**

This course examines the complex relationship between science, information technology, business, and society. Through a combination of lectures, readings, case studies, exercises, and projects, we will explore following questions:

- What are the major breakthroughs in information technology?
- How were these breakthroughs driven by business needs and how did they affect business and society?
- What are the social and cultural values in business, science and technology?
- What are the economic challenges posted by rapid business-related information technology?
- What are the workings of information technologies used in business today?

At the end of this course, students should have a deeper understanding of the complex relationship between science, information technology, business and society and should be able to:

1. Describe major IT developments that have profound social and economic impacts. In particular, the scientific breakthroughs that bring about the developments, the obstacles that need to be overcome, the socioeconomic constraints that affect design choices and the impact of these developments on business, society as well as information technology progress.
2. Understand the working of business-related information technologies, e.g., hardware, software, database management systems, enterprise application systems, communication networks, the Internet, etc., and how they can be used to solve various business problems.
3. Understand techniques (e.g., customer relationship management, enterprise resource planning, supply chain management, etc.) and principles (e.g., market data usage, financial considerations, competition and company infrastructure) used in enterprises to facilitate efficient and effective business operations.
4. Describe individual jobs and IT tools used for operations, finance, accounting, marketing, sales, IT, logistics, human resources, internal communications, database management, etc. within a company.

## **INSTRUCTOR INFORMATION**

I am an Assistant Professor at Leavey School of Business, studying recommender systems, multichannel retailing, machine learning application and evaluation. Although this is my 1st year of teaching at Leavey, I

have taught MIS major classes, e.g., predictive analytics, when I was a PhD student. I earned my PhD from University of Minnesota in Summer 2020.

I love teaching and believe in active learning. In my class, in addition to transmitting knowledge, I also try various ways to create a free and stimulating environment for my students to take charge and independently construct their own knowledge. If you have any questions or need any help, please feel free to reach out to me. Email is the best way to reach me, and I typically respond within 24 hours.

## **COURSE MATERIALS**

**Required Text:** Paige Baltzan. 2020. *Business Driven Technology*, 8th Edition, McGraw-Hill Education, ISBN 978-1-260-42524-6.

E-book is accessible through McGraw-Hill Connect. (Access instructions will be provided on Camino.)

**Additional Materials:** Lecture slides, updates, etc. will be posted on our Camino site:

Section 19054: <https://camino.instructure.com/courses/64316>

Section 19058: <https://camino.instructure.com/courses/64331>

Section 19075: <https://camino.instructure.com/courses/64397>

Note that several lectures include materials not covered in the textbook. Check our Camino site regularly for updates.

You are responsible to ensure that your email address listed on Camino is correct and that you do not miss important announcements or other information. “Not knowing” is not an acceptable excuse.

## **COURSE REQUIREMENTS**

### **1. Class Attendance and Participation (20 points)**

Class attendance and participation are required. In addition to lectures, this class will also include oral case studies, which means that everyone is expected to read all case materials prior to class and to actively participate in discussion. This portion of your grade will consist of:

- The instructor knowing your face and name
- Answering questions raised by the instructor
- Asking interesting questions in class
- Contributing to class discussion (consider both quantity and quality)

**Attendance exceptions** will be granted in rare circumstances only with prior approval. Please let me know as much in advance as possible if there is a need to miss a class.

### **Tips for Class Participation and Contribution**

Class contributions can have various forms. Students who summarize, clarify, ask any relevant questions, or suggest what else needs to be covered will all be considered as making a valuable contribution. If you are shy

about contributing, consider preparing well and bringing your thoughts or questions on paper. If you are confident about public speaking, focus on increasing the quality-to-airtime ratio of your participation. I encourage you to take some risks in this class, assuming that you are well prepared. I will take many factors into account to evaluate your contribution to class learning.

Examples of things viewed positively:

- good analysis supported by case facts or your own experience
- good arguments expressed coherently and succinctly
- asking interesting questions about assigned readings
- relevant comments that incorporate concepts covered in class
- redirecting a discussion when the current point has been adequately discussed
- listening and building on what others say
- summarizing or reconciling previous thread of discussion
- constructive disagreement with rationale
- summarizing main takeaways from a specific case study
- testing and exploring new ideas that enhance learning

I will make every attempt to give students equal opportunities to participate. However, if you are concerned about your class participation, please don't hesitate to talk to me. I will be happy to discuss your class participation, or any other issue you might have on an individual basis. Obviously, you should participate in class if you want to share your ideas with others. Yet there is no need to try to dominate the discussion. Some of the best contributors participate less often than the most active speakers. Quality is as important as quantity.

## 2. Examinations (50 points)

Two Quizzes and other exercises will be a regular part of classes

There will be a Midterm and a Final exam. All closed book. Each will be comprehensive and cover all materials assigned up to the date of the exam.

**Makeup tests will not be given** unless for serious legitimate excuses allowed by university policies and arranged in advance.

## 3. Case Write-ups (10 points)

We will have 2 written case studies. For each case, students need to prepare and submit a write-up. Case write-ups should be typed, single spaced, in 12-point fonts, and approximately **one page long**.

There are many ways to write a case write-up. One recommended template is to define the key problem, analyze the critical issues using case information and course materials, suggest solutions, and explain the rationale behind the solution and elaborate how it can solve the problems the company faces. The case write-ups are meant to motivate careful reading and deep thinking about case materials based on what you learned in class. Case write-ups will be evaluated based on the following criteria:

- Quality of problem **diagnosis** – to correctly identify the symptoms, challenges, sources of problems, and potential impediments to achieving business goals;
- Depth of **analysis** – to approach a problem from a novel and rational perspective, to link statements from evidence, to develop pertinent inferences and good insights;
- Quality of **solutions** – to propose comprehensive, specific, and practical plans, to consider and evaluate alternatives, to make implementation recommendations;
- Quality of **writing** – to have a clear structure, logical arguments, and good readability.

#### 4. Team Project (20 points)

You will also work on a team project throughout the course. The goal of this assignment is to conduct an in-depth investigation of a specific challenge or topic related to IT and its business applications within the context of a company. There is a list of companies in various industries to choose from. Students will prepare a **project report** and deliver a **15-minute presentation** in class. The report and presentation will be evaluated on three criteria: depth of research and analysis, presentation structure and clarity, and public speaking skills including engaging the audience.

More details (timeline, deliverables, grading) about the team project are elaborated in Team Project Guide.

#### GRADING POLICY

Your final grade in this course will be based on the following.

	Points	Comments
<b>Class Attendance and Participation</b>	<b>20</b>	
Attendance and general participation	5	Attendance; Qs asked and answered
Oral case discussion	15	3 point for each
<b>Exams/Quizzes</b>	<b>50</b>	
Quiz#1	10	Chapters: B1, 1, 2, 3, 6
Mid-Term Exam	15	Chapters: B1, 1, 2, 3, 6, 7, 8, 10, 11
Quiz#2	10	Chapters: 12, Computer and Internet History, B6, 5
Final Exam	15	<b>Comprehensive – ALL materials covered</b>
<b>Case Write-ups</b>	<b>10</b>	
Case#1	5	Case on Sony
Case#2	5	Case on Amazon
<b>Team Project</b>	<b>20</b>	
Written Report	10	Team deliverable and individual participation
Team Presentation	10	Slides and contents delivery
<b>Total</b>	<b>100</b>	

Note that I reserve the right to change the distribution and add assignments as necessary, as a result, the final total grade may vary a bit as events of the quarter unfold and affect some assignments.

Your final letter grade in this course will be based on the following.

<b>A</b>	<b>93-100%</b>	<b>B</b>	<b>83-86%</b>	<b>C</b>	<b>73-76%</b>	<b>F</b>	<b>0-59%</b>
<b>A-</b>	<b>90-92%</b>	<b>B-</b>	<b>80-82%</b>	<b>C-</b>	<b>70-72%</b>		
<b>B+</b>	<b>87-89%</b>	<b>C+</b>	<b>77-79%</b>	<b>D</b>	<b>60-69%</b>		

#### Policies on Late Assignments

All writing assignments will have specific due dates. Students are required to submit an electronic copy in word or pdf formats on Camino.

**No late assignments will be accepted** unless it is due to a problem that is beyond your control, e.g., medical or business related. Specifically excluded are personal and vacation plans. Contact the instructor as soon as you know that you have a conflict.

## **CLASSROOM COMPUTER USE**

Cell phones, pagers, and similar electronic communication devices should be turned off during all classes. If you have an urgent phone call or text to respond to, please quietly exit the classroom and take care of it outside of our classroom or offline. You are welcome to use notebook computers or other devices to take notes as long as it does not hinder your ability to actively participate in class discussion.

## **ACADEMIC POLICY**

Student responsibility: By enrolling in this class, a student is bound by the requirements stated in this syllabus and given by the instructor. Students must operate with integrity in their dealings with faculty and other students; engage the learning materials with appropriate attention and dedication; maintain their engagement when challenged by difficult learning activities; contribute to the learning of others; and perform to standards set by the faculty.

Classroom behavior: Students should behave properly during class time to facilitate the teaching and learning.

## **ACADEMIC INTEGRITY**

*The Academic Integrity pledge is an expression of the University's commitment to fostering an understanding of -- and commitment to -- a culture of integrity at Santa Clara University. The Academic Integrity pledge, which applies to all students, states:*

*I am committed to be a person of integrity. I pledge, as a member of the Santa Clara University community, to abide by and uphold the standards of academic integrity contained in the Student Conduct Code.*

*Students are expected to uphold the principles of this pledge for all work in this class. For more information about Santa Clara University's academic integrity pledge and resources about ensuring academic integrity in your work, see [www.scu.edu/academic-integrity](http://www.scu.edu/academic-integrity).*

Work done for this course must adhere to the University's expectations outlined in the University Bulletin and the Student Handbook. The minimum penalty for cheating on an assignment is a failing grade. Cheating on exams will result in an F for the course. In addition, cheating will also be reported to the Office of Student Life according to the University Academic Integrity Protocol.

## **OFFICE OF ACCESSIBLE EDUCATION (FORMERLY DISABILITY RESOURCES)**

*If you have a documented disability for which accommodations may be required in this class, please contact the Office of Accessible Education (Benson 1, <http://www.scu.edu/oae>, 408-554-4109) as soon as possible to discuss your needs and register for accommodations with the University. If you have already arranged accommodations through OAE, please discuss them with me during my office hours during the first two weeks of class.*

*To ensure fairness and consistency, individual faculty members are required to receive verification from the Office of Accessible Education before providing accommodations. OAE will work with students and faculty to arrange proctored exams for students whose accommodations include double time for exams and/or assisted technology. Students with approved accommodations of time-and-a-half should talk with me as soon as possible.*

*OAE must be contacted in advance (at least two weeks of notice recommended) to schedule proctored examinations or to arrange other accommodations.*

## **ACCOMMODATIONS FOR PREGNANT AND PARENTING STUDENTS**

*In alignment with Title IX of the Education Amendments of 1972, and with the California Education Code, Section 66281.7, Santa Clara University provides reasonable accommodations to students who are pregnant, have recently experienced childbirth, and/or have medically related needs related to childbirth. Pregnant and parenting students can often arrange accommodations by working directly with their instructors, supervisors, or departments. In addition, the Office of Accessible Education will provide reasonable accommodations for pregnancy-related impairments which impact a major life activity.*

## **DISCRIMINATION AND SEXUAL MISCONDUCT (TITLE IX)**

*Santa Clara University upholds a zero-tolerance policy for discrimination, harassment and sexual misconduct. If you (or someone you know) have experienced discrimination or harassment, including sexual assault, domestic/dating violence, or stalking, I encourage you to tell someone promptly. For more information, please consult the University's Gender-Based Discrimination and Sexual Misconduct Policy at <http://bit.ly/2ce1hBb> or contact the University's EEO and Title IX Coordinator, Belinda Guthrie, at 408-554-3043, [bguthrie@scu.edu](mailto:bguthrie@scu.edu). Reports may be submitted online through <https://www.scu.edu/osl/report/> or anonymously through Ethicspoint <https://www.scu.edu/hr/quick-links/ethicspoint/>*

## **IN-CLASS RECORDINGS**

*The [Student Conduct Code](#) (p. 13) prohibits students from “making a video recording, audio recording, or streaming audio/video of private, non-public conversations and/or meetings, inclusive of the classroom setting, without the knowledge and consent of all recorded parties,” except in cases of approved disability accommodations. The Student Conduct Code also prohibits the “falsification or misuse, including non-authentic, altered, or fraudulent misuse, of University records, permits, documents, communication equipment, or identification cards and government-issued documents.” Dissemination or sharing of any classroom recording without the permission of the instructor would be considered “misuse” and, therefore, prohibited. Violations of these policies may result in disciplinary action by the University. At the instructor’s discretion, violations may also have an adverse effect on the student’s grade.*

## **ASSOCIATION WITH THE “VALUES IN SCIENCE AND TECHNOLOGY” PATHWAY**

*You can find information about Pathways on the Core Curriculum website <https://www.scu.edu/provost/core/> including specific Pathways, all courses associated with them, and the Reflection Essay prompt and rubric used to evaluate the final essay you will submit. <https://www.scu.edu/provost/core/pathways/pathway-reflection-essay-instructions/essay-submissions/>*

*If you declare this Pathway, you may use a representative piece of work from this course as one of the Pathways materials you will upload via e-Campus during your junior or senior year. Therefore, we recommend that you keep electronic copies of your work using Dropbox or Google Docs, in addition to saving copies on your own computer or flash drives. This may ensure you will have a range of choices for retrieving your saved files when you analyze and assemble your Pathways materials in preparation to write the Pathways reflection essay.*

## TENTATIVE CLASS SCHEDULE

Session #	Class Date/Day	Topics / Readings	Assignments and Class Activities
1	Sep 21 - Mon	<ul style="list-style-type: none"> <li>➤ Course Overview</li> <li>➤ Syllabus Walkthrough</li> <li>➤ Team Project Guide</li> <li>➤ <b>Chapter B1</b></li> </ul>	<i>Students should procure the required Textbook asap; Students are recommended to read materials prior to class.</i>
2	Sep 23 - Wed	<ul style="list-style-type: none"> <li>➤ <b>Chapter B1...cont.</b></li> </ul>	
3	Sep 25 - Fri	<ul style="list-style-type: none"> <li>➤ <b>Unit opening case</b> (text pages 3-4)</li> <li>➤ <b>Chapter 1:</b> Business Driven Technology</li> </ul>	<b><u>Oral Case Study #1: Big Data Unit Case Study</u></b> <i>Questions posted on Camino.</i>
4	Sep 28 - Mon	<ul style="list-style-type: none"> <li>➤ <b>Chapter 2:</b> Identifying Competitive Advantages</li> <li>➤ <b>Practice QUIZ#1</b></li> </ul>	
5	Sep 30 - Wed	<ul style="list-style-type: none"> <li>➤ <b>Chapter 3:</b> Implementing Competitive Advantages</li> <li>➤ <b>Practice QUIZ #2</b></li> </ul>	
6	Oct 2 - Fri	<ul style="list-style-type: none"> <li>➤ <b>Chapter 1 Case</b> (text pages 51-52)</li> <li>➤ Skip Chapter 4; part of Chapter 5 will be covered later</li> </ul>	<b><u>Oral Case Study #2: The World is Flat – Thomas Friedman</u></b> <i>Questions/video link posted on Camino.</i>  <b><u>Team Project:</u></b> <ul style="list-style-type: none"> <li>➤ One team member emails <b>names of team members &amp; top 3 company choices</b> to me (cc all members)</li> <li>➤ I will approve companies and team composition</li> <li>➤ Each team will study a different company</li> </ul>
7	Oct 5 - Mon	<ul style="list-style-type: none"> <li>➤ <b>Chapter 6:</b> Valuing and Storing Organizational Information – Databases</li> <li>➤ <b>Practice QUIZ #3</b></li> </ul>	
8	Oct 7 - Wed	<ul style="list-style-type: none"> <li>➤ <b>Chapter 6...continued</b></li> </ul>	
9	Oct 9 - Fri	<ul style="list-style-type: none"> <li>➤ <b>Graded QUIZ#1</b></li> <li>➤ <b>Chapter 3 Case</b> (text pages 95)</li> </ul>	<ul style="list-style-type: none"> <li>➤ <b>Graded QUIZ#1: Chapters B1, 1, 2, 3, 6</b></li> </ul> <b><u>Oral Case Study #3: Amazon Drone Knocking</u></b>
10	Oct 12 - Mon	<ul style="list-style-type: none"> <li>➤ <b>Chapter 7:</b> Accessing Organizational Information – Data Warehouses</li> </ul>	
11	Oct 14 - Wed	<ul style="list-style-type: none"> <li>➤ <b>Chapter 7...continued</b></li> <li>➤ <b>Chapter 8:</b> Understanding Big Data and Its Impact on Business</li> <li>➤ Skip Chapter 9</li> </ul>	
12	Oct 16 - Fri	<ul style="list-style-type: none"> <li>➤ <b>Graded QUIZ#1 – review</b></li> <li>➤ <b>Chapter 6 Case</b> (text pages 112-113)</li> </ul>	<b><u>Oral Case Study #4: Political Microtargeting</u></b> <i>Questions posted on Camino.</i>

Session #	Class Date/Day	Topics / Readings	Assignments and Class Activities
13	Oct 19 - Mon	<ul style="list-style-type: none"> <li>➤ <b>Chapter 10:</b> Supply Chain Management (SCM)</li> <li>➤ <b>Bullwhip simulation</b></li> </ul>	<b><u>Team Project (preliminary findings): two-page outline including</u></b> 1) Company description 2) Problem(s) and/or opportunity(ies) 3) Preliminary Recommendation(s) 4) Preliminary data sources 5) Student assignment of functional role.
14	Oct 21 - Wed	<ul style="list-style-type: none"> <li>➤ <b>Chapter 11:</b> Customer Relationship Management (CRM)</li> <li>➤ Mid-Term study guide + Practice Questions</li> </ul>	
15	Oct 23 - Fri	➤ <b>MID-TERM</b>	<b><i>MID-TERM EXAM: Chapters B1, 1, 2, 3, 6, 7, 8, 10, 11, Class materials (skip Chapters 4, 5, 9)</i></b>
16	Oct 26 - Mon	➤ <b>Chapter 12:</b> Enterprise Resource Planning (ERP)	
17	Oct 28 - Wed	<ul style="list-style-type: none"> <li>➤ <b>Computer history slides – Camino</b></li> <li>➤ <b>Computer history handout - Camino</b></li> </ul>	
18	Oct 30 - Fri	<ul style="list-style-type: none"> <li>➤ <b>Mid-term - review</b></li> <li>➤ <b>Internet history study guide handout - - Camino</b></li> <li>➤ First 45m of the video  <a href="https://www.youtube.com/watch?v=eTsNIfBR-dc">https://www.youtube.com/watch?v=eTsNIfBR-dc</a></li> <li>➤ Video snippet between 38m-42m  <a href="https://www.youtube.com/watch?v=WkAwZmCm2Fs">https://www.youtube.com/watch?v=WkAwZmCm2Fs</a></li> </ul>	Study guide: <b><u>20yr Internet History</u></b> <b><i>Oral Case Study #5: Internet History (based on videos)</i></b> <i>Questions posted on Camino.</i>  <b><u>Team Project (Discussion with Professor):</u></b> <i>No later than this date each Team should have met me ONCE to discuss project progress.</i>
19	Nov 2 - Mon	➤ <b>Chapter B6 + part of Chapter 5:</b> Information Security	
20	Nov 4 - Wed	➤ <b>Chapter 14:</b> E-business	
21	Nov 6 - Fri	<ul style="list-style-type: none"> <li>➤ <b>Graded QUIZ#2</b></li> <li>➤ <b>Chapter 12 Case</b> (text pages 221-222)</li> </ul>	<b><i>Graded QUIZ#2: Chapters 12, computer history, Internet history – handouts and videos, B6, part of Ch 5, 14</i></b> <b><u>Oral Case Study #6: ERP Failures</u></b>
22	Nov 9 - Mon	<ul style="list-style-type: none"> <li>➤ <b>“Sony Hack” Case Study</b></li> <li>➤ <b>Chapter 16:</b> Wireless Technology</li> </ul>	<b><u>Written Case Study #1 - Camino Submission:</u></b> <i>North Korea Hacks Sony Case Study Case and questions posted on Camino.</i>
23	Nov 11 - Wed	➤ <b>Chapter B3:</b> Hardware & Software	
24	Nov 13 - Fri	<ul style="list-style-type: none"> <li>➤ <b>Quizzes Review</b></li> <li>➤ <b>Unit opening Case</b> (text pages 159-160)</li> </ul>	<b><i>Robots Took My Job Unit Case Study</i></b>



Session #	Class Date/Day	Topics / Readings	Assignments and Class Activities
25	Nov 16 - Mon	<ul style="list-style-type: none"> <li>➤ “Amazon.com” Case Study <i>Comprehensive case study designed around the STS rubrics.</i></li> <li>➤ Chapter B12: Global Trends</li> </ul>	<b><u>Written Case Study #2 - Camino Submission:</u></b> <i>Amazon.com</i> <i>Case and questions posted on Camino.</i>
26	Nov 18 - Wed	<ul style="list-style-type: none"> <li>➤ <b>Team Presentations</b></li> </ul>	Being absent for other team presentations will <b>deduct 5 points from your project grade</b> <b>Extra Credit</b> - Questions asked during project presentations
27	Nov 20- Fri	<ul style="list-style-type: none"> <li>➤ <b>Team Presentations</b></li> </ul>	Being absent for other team presentations will <b>deduct 5 points from your project grade</b> <b>Extra Credit</b> - Questions asked during project presentations
<b>Academic Holiday / Thanksgiving</b>			
28	Nov 30- Mon	<ul style="list-style-type: none"> <li>➤ <b>Team Presentations</b></li> <li>➤ Discuss Final Exam</li> <li>➤ Final Exam study guide</li> <li>➤ Practice Quiz</li> </ul>	Being absent for other team presentations will <b>deduct 5 points from your project grade</b> <b>Extra Credit</b> - Questions asked during project presentations
	Dec 2- Dec 4	<ul style="list-style-type: none"> <li>➤ <b>FINAL EXAM:</b> Exam Dates/Locations Announced in Class</li> </ul>	<b><u>Team Project (Final Report due by 5p):</u></b> <b><i>Project report due in Camino (one per Team)</i></b>  <b><i>FINAL EXAM - Chapters 1, 2, 3, 5 (partial), 6, 7, 8, 10, 11, 12, 16, B1, B3, B6, B12, Computer History handout, Internet History, videos, cases, class material &amp; discussions.</i></b>