

Syllabus for CIS 3100

Management Information Systems

California State Polytechnic University, Pomona, California

College of Business Administration, Department of Computer Information Systems

Spring 2019

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This syllabus provides the guide for the entire course. This document may change.

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Class Meetings and Office Hours, Holidays

Term Dates

Classes run each week from January 22nd through May 5th, Tuesday and Thursdays.

Final Exam Time

TBA, per university schedule, online

Class Meeting Times and Locations

Section 5: 4 - 5:15 pm, Building 163 room 1015

Section 6: 5:30 - 6:45 pm, Building 1, room 309

Course Description

Management and development of information systems in modern businesses from the customer and MIS perspective. Information as a strategic asset. Acquisition, analysis, integration, presentation of internal and external information. Information management in international and multinational enterprises. Ethical, social impacts. May be taken up to three times for a total credit of 9 units.

Prerequisites

A minimum grade of C (2.0) in CIS 304, 305

Textbook and Software

Required Textbook

- Title: Information Systems Today: Managing in the Digital World, 8th ed
- Author: Valacich, Sneider
- ISBN-13: 978-0-13-463520-0

Software

- Microsoft Office, Access and Excel included. Powerpoint and Word will be used extensively
- Web Browser, updated

Lecture Format

Lectures will be delivered pertaining to each chapter of our textbook. A series of research and critical thinking exercises will follow, for class discussion soon after. Normally we will take an additional week for in-class exercises, which will take place with a group format. Students will perform research experiments with their groups, and present brief results with each discussion element. Five experiments will be conducted in this way, then four group experiments will be assigned, where they will work independently and outside of class. Expect to use each other week for discussions through the first 10 weeks of the course, then generate original work, more independently toward the final month.

Assignments

Assignments are posted in the section titled '[Lecture Topics and Assignments](#),' below.

Grade Change Requests

All grade change requests are to follow strict adherence to University guidelines. Do not ask for grade changes without a personal visit to the faculty during office hours. No emailed grade revision requests are accepted. Reasons for grade change cannot include **your desire for a different grade point**, and will not be accepted for this reason.

Attendance

Attendance is required for each class session, barring hospitalization. Any illness treated with doctor visits are to be substantiated with a letterhead note from your physician. Attendance is scored in your team's weekly presentation and recorded on a time card with your name on it. Absences will be printed on the card, and the card is not to be altered by the student. Please pick up the attendance card at the start of each class, then return the card at the close, proving your attendance or absence.

Make-up policy

There will be no make-up exams except for serious and compelling reasons that are substantiated with formal documents. For example, medical cases have to be substantiated with valid doctor or hospital note stating that the student is too ill to attend the exam.

Late assignments or projects

There is an automatic 75% point deduction for all late work, except in cases where ADA accommodations are present or a legitimate medical emergency exists, where a signed doctor's letter will lift a deduction.

Tutoring

For free tutoring on campus, contact the Learning Center in the library. Most likely, tutoring will be unavailable for CIS 3100, and require meetings with the Lecturer.

Grading

The grade scale will follow this chart.

Grade	Percentage
A	93.00-100.00
A-	90.00-92.99
B+	87.00-89.99
B	83.00-86.99
B-	80.00-82.99
C+	77.00-79.99
C	73.00-76.99
C-	70.00-72.99
D+	67.00-69.99
D	63.00-66.99
D-	60.00-62.99

F	0-59.99
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The course final grade will be based upon the following gradable items.

Graded Items	%
8 team experiments, 8 x 10 points each	80
Final Exam Paper, Team Deliverable	20
Total	100

** Please see due dates for your team presentations in the Lesson Plan, below.

Class Communication

Email requirements

1. Compose emails carefully, so to avoid offending your reader. Expect to read through your email several times to ensure its professionalism.
2. Avoid emails with more than several sentences. Ask questions which may be answered in a few words or sentences. Long emails run the risk of not being answered to your satisfaction.
3. Consult the syllabus and assignment before sending email. Remember, electronic communications are inherently limited, and cannot replace in-person office hours.
4. Unprofessional communications will not be responded to, and may be forwarded to University officials before reply. Avoid venting, hostile or other language deemed unwise to use personally.

Blackboard

Grades will be posted on the University Blackboard. Announcements will be posted on Blackboard and forwarded through email.

Official communications

Email is the official communication method of the University **and** CIS 315. Therefore, maintain your school email, as all official messages will flow to it.

Blackboard communications

Messages sent by students via Blackboard do not reach the Instructor via email. Hence, use your university email for contact.

Subject to Change

This syllabus and class schedule are subject to change. If the student is absent from class, it is the student's responsibility to check on announcements made and make up the work while absent. All lecture, assignment and learning materials will be posted to this syllabus, available on Github for each week.

Assignments

Assignments bearing the bulk of course credit are available at the start of the course. Rubrics and other details may change. Assignments are always posted to this syllabus, on the course github.

Course Policies

Classroom environment

The classroom is a special environment in which students and faculty come together to promote learning and growth. It is essential to this learning environment that respect for the rights of others seeking to learn, respect for the professionalism of the instructor, and the general goals of academic freedom are maintained. Student conduct which disrupts the learning process shall not be tolerated and may lead to disciplinary action and/or removal from class.

Using laptops, cellphones and other electronic devices

- Using laptops during the class for anything other than this class, personal conversations, talking or texting on cell phones or other distracting behavior are prohibited.
- As a courtesy to all, please turn off all cell phones and pagers during class. If the student needs to be reached for family medical or significant work-related issues, the student must present evidence to the instructor before the class starts.

- Absolutely no cellphones or other electronic devices may be used during an exam or quiz.

Attendance

- Arrive on time. Do not disturb other students by asking for directions or help on exercises when arrived late.
- If the student needs to leave early, the student must let the instructor know before the class starts, and choose a seat that minimizes disruption to the class when leaving.
- If the student has to miss the class, the student must send an email to let instructor know before class and explain the reason.
- If the student is sick and contagious, the student should not come to the class and risk getting others sick.
- If the student miss an exam due to this reason, a make up may be given. However students shall not abuse the trust - if the student appears to be sick very often then the student may be asked to present evidence such as doctor notes to the instructor.

Student responsibilities

- Each student is responsible for the successful completion and submission of all assignments and projects. Corrupted files or incomplete submission will not be credited. Students are also responsible for keeping a backup copy of each submission.
- The instructor will not review your assignments or projects before grading for the entire class to ensure fairness. The instructor will, however, help you understand the expectations and clarify the requirements.
- The instructor will not debug assignments or projects for individual student. The instructor will, however, help you gain knowledge and skills in analysis and design, problem solving, coding, testing and debugging, and answer **specific questions** about course topics. Make sure you have spent significant and reasonable amount of time and effort in research and working on your own before asking help.

Turnitin

Students written assignments may be checked through Turnitin.com for plagiarism detection.

University Policies

Students with Disabilities

Upon identifying themselves to the instructor and the university, students with disabilities will receive reasonable accommodation for learning and evaluation. For more information, contact Services to Students with Disabilities at <http://dsa.csupomona.edu/drc/>.

Academic Integrity

Students should understand or seek clarification about expectations for academic integrity in this course (including no cheating, plagiarism, or inappropriate collaboration); neither give nor receive unauthorized aid on examinations or other course work that is used by the instructor as the basis of grading; take responsibility to monitor academic dishonesty in any form and to report it to the instructor or other appropriate official for action.

Cheating and Plagiarism

Cheating is the actual or attempted practice of fraudulent or deceptive acts for the purpose of improving one's grade or obtaining course credit; such acts also include assisting another student to do so. Typically, such acts occur in relation to examinations. However, it is the intent of this definition that the term 'cheating' not be limited to examination situations only, but that it include any and all actions by a student that are intended to gain an unearned academic advantage by fraudulent or deceptive means. Plagiarism is a specific form of cheating which consists of the misuse of the published and/or unpublished works of others by misrepresenting the material (i.e., their intellectual property) so used as one's own work. Penalties for cheating and plagiarism range from a 0 or F on a particular assignment, through an F for the course, to expulsion from the university.

Computing Resources

At Cal Poly Pomona, computers and communications links to remote resources are recognized as being integral to the education and research experience. Every student is required to have his/her own laptop/computer or have other access to a computer with all the recommended software for this course. Find out more about how to access to the university's information resources from [Information Technology Services](#).

Copyright Policy

Copyright laws and fair use policies protect the rights of those who have produced the material. The copy in this course has been provided for private study, scholarship, or research. Other uses may require permission from the copyright holder. The user of this work is responsible for adhering to copyright law of the U.S. (Title 17, U.S. Code). A full description of Cal Poly Pomona's copyright policy is included in the [University's Intellectual Property policy](#). The course web site contains material protected by copyrights held by the instructor, other individuals or institutions. Such material is used for educational purposes in accord with

copyright law and/or with permission given by the owners of the original material. Students may download one copy of the materials on any single computer for non-commercial, personal, or educational purposes only, provided that (1) do not modify it, (2) use it only for the duration of this course, and (3) include both this notice and any copyright notice originally included with the material. Beyond this use, no material from the course web site may be copied, reproduced, re-published, uploaded, posted, transmitted, or distributed in any way without the permission of the original copyright holder. The instructor assumes no responsibility for individuals who improperly use copyrighted material placed on the web site.

Tentative Course Schedule

The Instructor will make the effort to deliver lessons along these guidelines. Students should use the Assignments Timetable as reference for homework that is due.

Presentation Format

Please have your team presentation ready on the following dates. Your team will present, in class. Then, feedback will be given and an additional four days allowed to make updates. The actual presentation is to be sent to Stefan, via dropbox. A link will be posted to the course blackboard, via Announcement. The final digital version will be graded in the week following these due dates.

The grading rubric for each presentation is below.

Lecture Topics and Assignments in 3100

Each module will last two weeks. The lecture, concept portion will last the first week, then the exercise, team work and deliverable phase will take the second week. In each module, a set of readings will be assigned, generally one chapter per module. Each deliverable must show your team's integration of the readings, as well as the skills portion, demonstrated in lecture.

Grading Rubric for Papers

The grading rubric for each deliverable are as follows.

Grade...	Demonstrated...
A	1. Industry knowledge. Integrated 8 concepts from the chapter, with full bibliographic reference. Integration of chapter content entailed stating the

	<p>concept, briefly defining it, per a published author, then applying the concept to analyze the task at-hand. (33%)</p> <p>2. Industry skills. Integration of of module skills entail applying the Instructor's demonstrated skill, that module, to the task at-hand. Typically, a practical skill requires a quantitative analysis, IT skill (shown via screenshots), or a diagrammatic analysis (UML, Use Case, BPMN, SWOT, Porters', etc). (33%)</p> <p>3. Literacy and Numeracy, at the college level. For each deliverable, a printed paper is handed to the Instructor on the due date, <u>also</u> uploaded to a Dropbox on the same day. Papers will obey standards of the American Marketing Association (use this guide, http://research.wou.edu/ama/amaguide. Most importantly, your team's work follows lines of logic. Paper arrives at conclusions based on facts you have established. Every major assumption must be based upon data, graphed and presented in the paper. Graphics, diagrams never take up more than 25 of a page. Single spaced, 11 pt font. 5 page minimum. (33%)</p>
B	Completes 85% of the A requirements
C	Completes 75% of the A requirements
D	Completes 65% of the A requirements

In each module, class participation will take place in the following ways:

- Debate, staged before the class
- Presentation, done between instructor and group only
- Team work period
- Class discussion, where a topic is assigned for group work, then debated or discussed.

For each module, you can assume a visual portion will comprise the lecture period, where students must attend. A discussion topic will follow, for class participation. A skill presentation will follow, with a required group exercise, which may result in a presentation or other discussion. Class time will be busy, rowdy, and talkative. Instructor assumes you will arrive prepared, having read and studied the material, and you will have comments when called upon.

Module 1

Topics: IT Megatrends, relevance of data, component of IT, organizational context of IT, privacy, intellectual property, ethics, business cases for IT

Skillset: team charters and governance, collaboration tools, github and source code synchronization, google docs, shared clouds and file repositories, MS excel and data aggregation, design of experiments, using MS Access to create tables and execute actionable queries. PESTLE analysis of an industry, Porters' Five Forces Analysis, SWOT analysis of a firm.

Assignment

As a class, create numerous affinity groups, focused on industry. Band into teams, write team charters and contracts for performance of the week's deliverable. Investigate key issues in your industry via news, personal stories. Discover industry contacts online via LinkedIn and Meetup.com.

Deliverable

Your paper should provide an overview of competitive pressures facing your industry, and the issues firms are facing. Describe the landscape of issues related to your industry using PESTLE, then profile a local corporation using Porter's Five Forces. Identify issues impacting the performance of a sample corporation, then describe its competitive position via SWOT analysis. Embed your diagrammatic analysis in your paper, using AMA format. This version of the paper should reflect your research, on a rudimentary/introductory level. It is graded based on a basic understanding of the analyses above. Be sure to incorporate 8 topics from the chapter which are useful to your analysis.

Module 2

Topics: how corporate strategy shapes IS, and reverse, SDLC, Business Cases for software development, software development methodologies

Reading: Chapters 2 and 9

Assignment:

Continue to develop your understanding of your industry, as a team. Refine your team's paper to reflect more immersion in issues facing firms in your industry. Utilize the framework of the paper in Module 1, but enrich the paper with more insight. The paper should deliver an astute analysis of issues impacting firms, but this paper must be suitable for discussion with an industry member. Collect feedback from an industry member, and incorporate into your paper. Paper should display significant sophistication when compared to Module 1's paper, and be completely rewritten. Number of bibliographic sources cited and listed my expand by a factor of 3. Be sure to incorporate 8 topics from the chapter which are useful to your analysis.

Module 3

Topics: IT Infrastructure, cloud computing, data centers and costs of IS, Amazon Web Services vs proprietary data centers, the influence of Google

Reading: Chapters 3 and 10

Skillset: demographic and industry universes, use of data, graphing, Access table design. Root Cause Analysis and Ishikawa diagramming

Assignment:

Compile government data on your industry, arrive at statistical facts about your industry. Identify an issue that curtails the competitive energy of a firm, or compromises their ability to compete amongst their industry members. Discover the root cause of these issues through Ishikawa analysis. Present the reasons why a firm fails to reach goals, and be more successful in their current market. Research the demographics of the industry market via US census data, and point to cultural reasons why firms in the industry are experiencing issues. Embed your diagrammatic analysis in your AMA paper. Be sure to incorporate 8 topics from the chapter which are useful to your analysis.

Module 4

Topics: Ecommerce and consumer economics

Skillset:

Reading: Chapter 4

Skillset: organizational mapping, Business Process Model Notation (BPMN), software requirements discovery, network topologies and network diagramming, UI design

Assignment

Create a map of the types of organizations which typically interact within your industry. Then map the internal organization of each typical organization, forming an organization or organizations. Map where collaboration is weak or information is missing, weakening relationships or effective interaction. Outline how weak or asymmetrical communication drives root causes of issues, and propose a business process wherein the deficiency is remedied, using BPMN. Provide a basic set of user interfaces which help visualize your process map. Embed your diagrammatic analysis in your AMA paper. Provide an Access table structure that supports your BPMN, assuming that several tables are necessary to support business operations in each organization, to support your business process model. Insert screenshots of the table designs from Access table Design View. Be sure to incorporate 8 topics from the chapter which are useful to your analysis.

Module 5

Topics: Collaboration, modes of communication, social media, new corporate models based on collaborative technologies

Skillset: Access table design, data types, queries (sorting, relationships, primary keys), entity relationship design (ERD)

Assignment

Given your understanding of how industry partners interact, and their challenges reaching customers, define what information is held by each actor within your organizational map. Design

tables for each actor, where information that is critical to solving your industry problem is captured. Present a series of screen shots of your table design, using your Access tables, while in Design Mode, and describe what each industry actor knows. Combine your organizational chart (interorganizational chart) from the prior week to illustrate the web of interconnecting actors, and the information each holds, and comment upon how that creates a web which software must connect. Be sure to incorporate 8 topics from the chapter which are useful to your analysis.

Module 6

Topics: Big Data, Analytics, Decision science, Business Intelligence

Skillset: Robust statistics in Excel, combining excel and access, contrasting access to excel, User Experience design, google analytics

Assignment

In module 6, we will do a practical project in business intelligence. Please download the project materials (data, excel spreadsheet, rubric, etc) here:

- <https://github.com/stefanbund/3100/tree/master/module%206%20project%20materials%2C%20excel%20>

Module 7

Topics: Enterprise Information Systems, Enterprise Resource Planning, Internet of Things

Skills: database queries, database design

Assignment

For module 7, students will complete an exercise in Access, to build upon their ERD and table designs. To begin, please go to our course github repository, where you will find the assignment description and accompanying materials:

- <https://github.com/stefanbund/3100/tree/master/module%207%20project%20materials%2C%20access>

You will find the grading rubric in this location, in addition to the data and instructions. Time can be devoted to the project during workshop time, in class.

Module 8

Topics: Customer Resource Management, Business-to-Business ECommerce, Supply Chain IT, Value Chain Analysis

Skills: value chain analysis, system validation and verification, user acceptance testing, stakeholder interviewing, drafting and rewriting papers/refining written works

Assignment

Refine your working paper. This paper should show the following sections, and insert your diagrams. For each section, retitle the section using interesting, compelling language which prompts the reader to delve further into your paper. Create an abstract, or overview statement which defines the issue your system solves, and describes the strategy you selected to tackle the issue.

1. Industry PESTLE
 - a. Sample SWOT for a company
 - b. Discuss trends, larger macroeconomic issues, with a Five Forces diagram
 - c. Other graphs you built to illustrate the industry's issues, conundrums, trend, etc
2. Root Cause Analysis a Problem
 - a. Ishikawa diagram and discussion.
3. Inter-organizational map, depicting the web of relationships among industry actors
4. BPMN, proposing an ideal system for the web/issue
5. Database ERD, depicting what is stored
6. UI diagrams, depicting the form the solution will take, as software/web site
7. Analytics, SQL queries you deploy, to deliver actionable statistics to actor/managers

Present the draft to a member of the industry. Collect their feedback. Write this paper with the understanding that you will refine the paper for the Final Exam, at which point industry feedback on your idea will be required. Be sure to incorporate 8 topics from the chapter which are useful to your analysis.

Final Exam

Present the working paper to the Instructor. A working draft will be presented during the final, at which point the team will receive feedback. Your team may incorporate the feedback into the final paper, submitted digitally by midnight of the final, or day after. Industry feedback will be required for full A credit.

Academic Schedule

3100 schedule				
week #	month	t	th	module
1	jan	22	24	1
2		29	31	
3	feb	5	7	2
4		12	14	

5		19	21	3
6		26	28	
7	mar	5	7	4
8		12	14	
9		19	21	5
10		26	28	
11	apr	2	4	holiday
12		9	11	6
13		16	18	7
14		23	25	
15	may	30	2	8
16		7	9	
		14	16	finals days
		21		grades submitted

3100 Pedagogy statement

Details: term teaching methodology, with data collection scheme
Hypothesis, questions for experimentation

Hypothesis

Background

Teaching en-masse encourages team assignments, in pursuit of experiential, constructivist teaching. Projects tend to follow, with group rubrics. Lectures are debatable value, where students lost interest when confronted with a monolithic speaker. Though the speaker can paint a vivid picture with monologue, the students cannot engage with the single speaker. Recent lectures illuminate that students are open to video presentations, made with learning materials such as web pages, galleries of images, practical hands-on demonstration, and other media. Learners are more open to viewing media, which can be reviewed, and thus allows a lower-pressure delivery.

This term will emphasize media production, followed by designed in-class exercises. Before each talk, a lecture will be prepared, recorded on video, where a large collection of links will be

discussed. The textbook will be covered, topic for topic, but no publisher slides will be used. Futurewise, the course may be offered without a textbook, due to this work.

The hypothesis is that learning equals retention, and retention is accomplished via imprint. Imprint is experientially imparted, through exercise, personal witness and empirical measure. Thus, the course follows a sequence of media engagement (video lecture), with experiential engagements (in-class and out of class).

The students will view the video, then engage in a team assignment, mostly taking 5 to ten minutes. Three such team assignments, followed by discussion will characterize the lecture period. We aim to animate students to the point that class discussions will be captivating, and cover the general gamut of material.

Students will remain responsible for chapter content, and held accountable in the graded assignment, where a large number of chapter topics must be covered.

The major questions asked in this approach are:

1. What constitutes an active learning environment, in the classroom? Does video surpass traditional monologue or power point as the most captivating method of teaching?
2. Since videos done beforehand remove the pressure from the lecturer entirely, and allow for refinement, should those lectures resemble the kind of monologue, traditionally given, in class? Should they be more filmic, involving clips, live montages, and other techniques attributed to filmmaking? Is this an entree to producing films, instead of lectures?
3. Is the edited nature of film also permissive of edits, and changes, over time? Are we in the post-powerpoint era of teaching, and if so, are we now into the youtube era -- where moving visual content trumps all?
4. After the film portion, what in-class exercises help stimulate topical engagement, per rubric, below?
5. After the film, what in-class exercises stimulate homework engagement?
6. What was the interrelationship between post-film exercises, and homework delivery, in terms of paper rubric?

Data collection

Quantitative Measures

Did students engage textbook chapter content?

Scores in rubric should reflect how much chapter content is covered by the teacher, or otherwise motivated, for study by the students. They should be graded on how much chapter content, reflected in lecture movies, are covered in their papers. In other words, did scores measure how much chapter content was captured in their project?

Did group papers show improvement, deepened skills, and improved composition? Should a composition rubric be prepared, to measure the caliber of writing, and instruct how papers should proceed? If a detailed rubric accompanies the assignment, it is likely that measure can take place, with regards to quality.

Did the students learn the concepts through application?

Papers must be catalogued by assignment, for review after, to see how each team utilized the concepts.

To what extent did students engage real industry, with respect to the content?

Projects must be chosen by students, and assisted by instructor. Instead of pursuing a personal project, they must belong to an industry prized by the student. The integration of professional pursuit, and practicable concepts will characterize the assignment sequence.

Did choosing an industry help them refine their career search?

Did this approach assist the students in understanding the economy, outside of their academic work?

Qualitative, or story-driven measures

Did industry workers find student project engaging?

Did students feel more connected to their industry?

Did students register personal reflection on industry (positive/negative) and feel better oriented in their career choices?

Did students develop a strategy for efficiently rendering deliverables, given the combined team and topical complexity?

Did they show morale as projects increased in complexity, and 'real-worldliness'?

Discussion on Method

The teaching in the course is dependent on 3 elements, lecture, class experiences, and homework experiences. The method will outline a path, or flow between the three elements. The term will cover eight modules, where one or two chapter contents will be presented. Instances where there is a topical overlap will accompany each other, even when they are out of sequence in the textbook. Chapter modules will show clear alignment with the textbook, in terms of topic language. The bottom flow of method takes place over two week sequence, where one module (or combination of book chapters) is covered.

A general theme will be used: **the virtual laboratory**. Each group will break off to investigate real issues related to an industry they choose. The overall feel will be less a classroom, more of a research organization that lacks borders, and institutes extreme sharing between members. Since it is inevitable that solutions will pass between groups, harder, more holistic problems can be tackled by class members (and assigned by the professor).

Week One, Each Module

1. Film component, presented in class. Will follow a **film rubric** for effectiveness.
2. Class exercise, over remaining time. Encourages an open, all member discussion, with open ended sequence of questions, aligned with the film. Follows a **discussion rubric**.
3. Initial homework. The homework paper is broken into phases, where preliminary research is done at the team level. Data collection is done, and early import to excel. Conceptual work with the database is done, to understand how the database works. Teams must follow a **collaboration rubric**, to work together over distance.

Week Two, Each Module

1. Team meeting. What major themes did you discover? Combine the major observations of each team member into a document, in the form of an outline, in a shared document technology, like google docs. Ensure that each observation is an empirical, statistical one, or significantly based on other quantitative measures, which are as non-biased as possible.
2. Instructor interaction. Take several minutes to help move past technical issues, at the podium, where the faculty can demonstrate fixes, look at your data, and show solutions on the projector.
3. Initial feedback. Students can present a rough draft, for red line markup and initial review.
4. Presentation. Some groups will present a power point walkthrough of their results, for conceptual feedback. Small audiences can form around the podium to watch the results from other groups, while other groups may work.

Film Rubric: Videos Shown by the Instructor

Script development. Follows closely to textbook. Will illuminate short case studies which illustrate chapter content, with minimal power point-like use of text overlaid on the screen during the editing process.

Voice over. Reading the script, recorded.

Visual performance. Using visual content, aligned with the voiceover. Will edit alongside of voice over.

Technical discussion. Will include simple video based screen capture, where technical material is covered. Is potentially edited back into the main presentation video.

Collaboration Rubric: Team Assignments

What technology is required, to collaborate?

1. Github, for shared artifacts, files and presentation documents. Follows the **repository rubric**.
2. Github pages, for eportfolios, other public media for easy reading
3. Google Drive, contains spreadsheets, documents, pdf and slides, on a shared basis
4. Blackboard, for syllabus, grades
5. Cal Poly Email, for instructor questions and long form messages
6. App Messaging, using an app framework of team's choosing.

Are groups sharing work? This results from a weekly **delegation charter**, which contractually lays out how work is shared. This is done before work begins, and obligates each team member to performance. Must be posted to the team github in order to become binding.

Discussion Rubric: All-Class Member Experiences

1. Students are raising hands, and called on with hands raised, in order, best-effort
2. Effort is made to stimulate real-world discussion
3. Students make an effort to respect others' point of view, while speaking freely
4. Instructor speaks from experience, without notes, with reference to industry and economy

Repository Rubric for the Use of Github

1. Is each module organized in a folder, where the final deliverable is presented, and clear for the faculty to see? Can the faculty synchronize their repository, and see the team's final work effortlessly?
2. Are final deliverable works easy to identify, download, and organize, by Faculty? Are the team mates' last names on every final deliverable?
3. Is the monolithic term paper available for review? Are each module feeding material into the term paper? Is a stream of edits and changes available, on github? Can team members make comments, online, regarding the term paper?
4. Is the delegation charter present with each module?
5. Is a module folder being used to store artifacts, pdf reports from other authors, scratch documents and other materials?
6. Is every team member using github, to push and pull materials? Where is there proof that each user is pushing, or contributing material?