

ORIGINATOR'S SECTION:

1. College: CHABSS CoBA CoEHHS CSM
 Desired Term and Year of Implementation (e.g., Fall 2008):
 Spring 2016

2. Course is to be considered for G.E.? (If yes, also fill out appropriate GE form*) Yes No

3. Course will be a variable-topics (generic) course? Yes No
 ("generic" is a placeholder for topics)

4. Course abbreviation and Number:* MIS 488 (previously offered as a topic course MIS 484-4)
 409

5. Title: (Titles using jargon, slang, copyrighted names, trade names, or any non-essential punctuation may not be used.)
 Big Data Information Systems

6. Abbreviated Title for PeopleSoft:
 (no more than 25 characters, including spaces)
 Big Data Info Sys.

7. Number of Units: 4

8. Catalog Description: (Not to exceed 80 words; language should conform to catalog copy. Please consult the catalog for models of style and format; include all necessary information regarding consent for enrollment, pre- and/or corequisites, repeated enrollment, crosslisting, as detailed below. Such information does not count toward the 80-word limit.)
 Examines the insights and uses of Cloud computing and Big Data. Focuses on the applications of data models in the Cloud computing and Big Data environments. Describes Big Data, unstructured data types, and their uses. Discussions include impact of factors such as Variety, Velocity, Volume of Big Data. Describes Cloud computing, its uses, benefits, and challenges. Examines the emerging data models for these areas including the relevance of data supersets and importance of correlation vs causality. Examines Big Data applications in different areas such as Retail, Health, Finance, Supply Chain Logistics, and Marketing.
 (Lower Case) *para*
 Preseq. MIS 302 or 304, with a grade of C (2.0) or better.

9. Why is this course being proposed?
 (formerly MIS 484-4)
 This course is part of the Management Information Systems Option Curriculum elective courses. Currently both the region and state sees tremendous growth in big data analysis and management skillsets for business needs. These are exemplified by the tremendous growth in business adoption of big data. This class teaches students both technical and analytical skills and prepares them for managing big data in the business. We are proposing the new course to meet the students/industry demand.

10. Mode of Instruction*
 For definitions of the Course Classification Numbers:
http://www.csusm.edu/academic_programs/curriculum/schedule/catalog/curricular/DOCUMENTS/Curricular_Forms_Tab/Instructional%20Mode%20Conventions.pdf

Type of Instruction	Number of Credit Units	Instructional Mode (Course Classification Number)
Lecture	4	C2
Activity		
Lab		

11. Grading Method:*
 Normal (N) (Allows Letter Grade +/-, and Credit/No Credit)
 Normal Plus Report-in-Progress (NP) (Allows Letter Grade +/-, Credit/No Credit, and Report-in-Progress)
 Credit/No Credit Only (C)
 Credit/No Credit or Report-in-Progress Only (CP)

12. If the (NP) or (CP) grading system was selected, please explain the need for this grade option.

13. Course Requires Consent for Enrollment? Yes No
 Faculty Credential Analyst Dean Program/Department - Director/Chair

* If Originator is uncertain of this entry, please consult with Program/Department Director/Chair.

14. Course Can be Taken for Credit More than Once? Yes No
 If yes, how many times? (including first offering)

15. Is Course Crosslisted: Yes No
 If yes, indicate which course and check "yes" in item #22 below.

16. Prerequisite(s): Yes No MIS 302 or MIS 304 with a grade of C (2.0) or better

17. Corequisite(s): Yes No

18. Documentation attached: Syllabus Detailed Course Outline

19. If this course has been offered as a topic, please enter topic abbreviation, number, and suffix:* MIS 484-4

20. How often will this course be offered once established?* Every year

PROGRAM DIRECTOR/CHAIR - COLLEGE CURRICULUM COMMITTEE SECTION:
 (Mandatory information – all items in this section must be completed.)

21. Does this course fulfill a requirement for any major (i.e., core course or elective for a major, majors in other departments, minors in other departments)? Yes No
 If yes, please specify:
 An MIS Elective

22. Does this course impact other discipline(s)? (If there is any uncertainty as to whether a particular discipline is affected, check "yes" and obtain signature.) Yes No
 R.A.

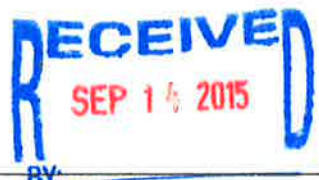
If yes, obtain signature(s). Any objections should be stated in writing and attached to this form.

Discipline OSCM _____ Date _____
 _____ Support _____ Oppose _____ Signature _____

Discipline C.Sci. _____ Date _____
 _____ Support _____ Oppose _____ Signature _____

SIGNATURES : (COLLEGE LEVEL) :
(UNIVERSITY LEVEL)

Chet Kumar 1. Originator (please print or type name)	<u>Chet Kumar</u> Date	09/03/15	5. UCC Committee Chair	Date
2. Program Director/Chair	<u>[Signature]</u> Date	9/8/15	6. Vice President for Academic Affairs (or Designee)	Date
3. College Curriculum Committee	<u>[Signature]</u> Date	9/10/15	7. President (or Designee)	Date
4. College Dean (or Designee)	<u>[Signature]</u> Date	9/11/15		



* If Originator is uncertain of this entry, please consult with Program/Department Director/Chair.

Subject: FW: CS Review of MIS 409

From: Youwen Ouyang
Sent: Monday, October 05, 2015 1:07 PM
To: Virginia Mann <vmann@csusm.edu>; Suzanne Moineau <smoineau@csusm.edu>
Cc: Regina Eisenbach <regina@csusm.edu>; Wayne Aitken <waitken@csusm.edu>
Subject: RE: CS Review of MIS 409

Hi Virginia,

Thanks for the update of the link. I can access the proposal now. The concern our department has is that the uses highly technical terms such as "data models", "cloud computing", "software technologies of big data" in the course description. Such terms could give students and employees the impression of a highly technical class that they would expect in a computer science or applied math curriculum. However, the pre-requisite for the class is MIS 302/304, which does not prepare students with appropriate technical background. We feel that without appropriate understanding of the related technical background in "data modeling", "cloud computing", and "software technologies of big data", it would be difficult for them to develop meaningful comparisons of the differences among different technologies and applications as the course structure suggests.

I've copied Wayne Aitken, department chair of math, on this email since I understand that math has the expertise in data analysis. We would love to see a more collaborative effort among the three departments so that we can put together a curriculum package that best support the region's need for expertise in big data analyses.

Best,
Youwen

From: Youwen Ouyang
Sent: Monday, October 05, 2015 12:33 PM
To: Virginia Mann <vmann@csusm.edu>; Suzanne Moineau <smoineau@csusm.edu>
Cc: Regina Eisenbach <regina@csusm.edu>
Subject: RE: CS Review of MIS 409

Hi Virginia,

Congratulations on your daughter's wedding!

We have reviewed and discussed MIS 409 last week in our department meeting. We indeed have some concerns about the class. However, when I tried to access the description again, the link seems to be broken. Please advise how I would be able to access it again.

Thanks,
Youwen

Management and Organizations Track Electives (14 units)

A minimum of 10 units must be selected from the list of electives below. The remaining 4 units can be taken from courses in ACCT, FIN, GBM, OM, MIS, MGMT, or MKTG. Students in the track cannot take ACCT 308 for credit. A maximum of 4 units may be taken outside the College of Business with prior approval from CoBA.

ENTR 320	4
ENTR 421	2
GBM 425	4
GBM 427	2
MGMT 420	4
MGMT 432	2
MGMT 445	2
MGMT 465	4
MGMT 481-5	1-4
MGMT 498	1-4
Capstone (4 units)	
BUS 444	4
Senior Experience (5 units)	
BUS 492	1
BUS 493	4

**Management Option –
Entrepreneurship Track**
(55 units)

The Entrepreneurship track is specifically designed to help students incubate a business idea, learn the different components essential to starting and managing a start-up business, and evaluate closely the viability of their idea. The program is designed to help students develop their ideas into a well-conceived business plan that can lead to a start-up business.

In order to accomplish these objectives, students will move through a sequence of courses that build upon one another. Students begin by exploring their personal creativity, turning creative thought into innovative new products and services, developing their idea, understanding the challenges of entrepreneurship, and completing a first-level analysis of the viability of their business idea. Students then take courses in new venture marketing, management, and finance to increase their understanding and functional skills to further develop their business idea and determine its potential. Students will also benefit significantly from the experiences of entrepreneurs in the community and learn from their successes and failures. The track concludes with the creation of a business plan through the capstone course.

Foundation of Business Courses (12 units)	
BUS 302	2
BUS 304	4
FIN 302	2
MIS 302	2
OM 302	2

Management Core Courses (20 units)

	Units
MGMT 305	4
MGMT 415	4
MGMT 452	4
MGMT 461	4
MKTG 305	4
Entrepreneurship Track Required Courses (14 units)	
ENTR 320	4
ENTR 420	2
ENTR 421	2
ENTR 422	2
ENTR 423	2
ENTR 430	2
Capstone (4 units)	
BUS 444	4
Senior Experience (5 units)	
BUS 492	1
BUS 493	4

**MANAGEMENT INFORMATION
SYSTEMS OPTION**

(55 Units)

This option focuses on developing business-oriented professionals for managing information systems. Students will learn how to define organizational information requirements and employ technology-enabled solutions to meet the needs of an organization. They will also learn how to lead and manage mission-critical projects, especially those related to Internet applications. The themes of the option include principles of information systems, business systems analysis, and database management. The option also addresses subjects such as networking, multimedia, web applications, and electronic commerce. These topics not only provide students with knowledge and skills essential for enhancing organizational effectiveness, but also prepare them for careers in systems analysis, application development, social-networking driven business, entrepreneurship, and process design.

Foundations of Business Courses (12 units)	
BUS 302	2
BUS 304	4
FIN 302*	2
MGMT 302*	2
MKTG 302*	2

**Equivalent 4-unit courses can be substituted for these 2-unit courses with 2 units applied toward MIS electives. However, only 4 excess units can be counted as MIS electives.*

MIS Core Courses (12 units)	
MIS 304	4
MIS 411	4
OM 305	4

MIS Elective Courses (22 units)

A minimum of 16 units must be selected from the following approved MIS/OM courses. The remaining 6 units can be taken from electives in ACCT, ENTR, FIN, GBM, GSCM, MKTG, or MGMT. Students in the MIS option cannot take ACCT 308 for credit. Units outside of MIS may be substituted with prior approval from CoBA.

Students in MIS option cannot take ACCT 308 for elective credit.

MIS 320	2
MIS 425	4
MIS 426	4
MIS 427	4
MIS 430	4
MIS 435	4
MIS 440	4
MIS 480	4
MIS 481-5	1-4
MIS 498	1-4
OM 406	4

MIS 409 4

Capstone (4 units)

BUS 444	4
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Senior Experience (5 units)

BUS 492	1
BUS 493	4

MARKETING OPTION

(55 Units)

Marketing has been defined as "an organizational function and a set of processes for creating, communicating, and delivering value to customers and for managing customer relationships in ways that benefit the organization and its stakeholders" (American Marketing Association). Effective marketing is very important for the long-term success of any organization because it focuses the organization on attracting and retaining customers through its combination of product, pricing, distribution, and promotion strategies.

All students in the Marketing Option will take a course that focuses on the foundational principles of marketing, and courses that explore the behavior of consumers, the process through which marketers conduct research to understand consumers, and the special challenges and opportunities marketers face in different cultures. In addition, students will take specialized elective courses that focus on developing appropriate strategies for targeting and serving customers. Through their coursework and other educational experiences, students can prepare for a variety of positions in the areas such as marketing communication and advertising, sports marketing, customer relationship management, marketing research, sales, services marketing, and international marketing.

Foundations of Business Courses (12 units)

	Units
BUS 302	2
BUS 304	4
FIN 302*	2
MIS 302*	2
OM 302*	2

* Equivalent 4-unit course can be substituted for this 2-unit course with 2-units applied toward Marketing electives, however, only 4 excess units can be counted toward Marketing electives.

Marketing Option Core Courses (20 units)

MGMT 305	4
MKTG 305	4
MKTG 442	4
MKTG 445	4
MKTG 448	4

Marketing Option Electives (14 units)

A minimum of 8 units must be selected from the list of electives below. The remaining 6 units may also be selected from the list below or from any 300- and 400-level course in the College of Business. Up to 4 units may be taken outside the College of Business with prior approval from the Management and Marketing Department Chair.

ENTR 420	2
MKTG 315	2
MKTG 340	2
MKTG 433	4
MKTG 446	2
MKTG 449	4
MKTG 450	4
MKTG 452	2
MKTG 481-5	1-4
MKTG 498	1-4

Capstone (4 units)

BUS 444	4
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Senior Experience (5 units)

BUS 492	1
BUS 493	4

MANAGEMENT INFORMATION SYSTEMS (MIS)

College of Business Administration

Students who have remained in any MIS course past the add/drop deadline three times may not register a fourth time for that course.

MIS 302 (2)
Foundations of Management Information Systems

Survey of management information systems topics with an emphasis on service applications. Includes computer hardware and software, databases, information systems development, and the role of information systems in the organization. *Enrollment restricted to students who have completed all lower-division pre-business core (major status in Business Administration — i.e. attained business status) or Biotechnology majors. Prerequisites for BIOT students: ACCT 201, ACCT 202, MATH 160, and either PSYC 100 or SOC 101 with grades of C (2.0) or better in all courses.*

MIS 304 (4)
Principles of Management Information Systems

Introduction to subjects in management information systems. Includes computer hardware and software, databases, information systems development, and the role of information systems in the organization. *Three hours of lecture and two hours of laboratory. Enrollment restricted to students who have completed all lower-division pre-business core (major status in Business Administration — i.e. attained business status).*

MIS 308 (4)
Enterprise Systems

Provide students with an understanding of the theoretical and practical issues related to the application of enterprise systems within organizations. The main focus of this course is to demonstrate how enterprise systems integrate information and organizational processes across functional areas with a unified system comprised of a shared database and shared reporting tools. *Prerequisites: MIS 302 or MIS 304 and all lower-division pre-business core.*

MIS 320 (2)
MIS Executives Seminar

Exposes students to challenges facing various industries and introduces students to innovative information system solutions to enhance organizational effectiveness through guest speeches and discovery learning. *Enrollment restricted to students who have completed all lower-division pre-business core (major status in Business Administration -- i.e. attained business status).*

MIS 328 (4)
Mobile Business Applications

Introduces students to business mobile application development. Studies the impact of the various mobile technologies on business processes. Students will also be introduced to development guidelines, application frameworks, and development environments. Students will learn a programming language to enable them to build mobile applications. Coverage of the underlying theory will be coupled with hands-on exercises through the development of innovative mobile solutions to practical business problems. *May not be taken for credit by students who have received credit for MIS 484-2. Enrollment restricted to students who have completed all lower-division pre-business core (major status in Business Administration — i.e. attained business status).*

MIS 388 (4)
Database Management

Covers methods for developing solutions to business and system

problems using elements of database use classes and business applications. *Completed all lower-division pre-business core (major status in Business Administration — i.e. attained business status).*

MIS 408 (4)
Information Systems

Provides an introduction to intelligence, data support reporting performance and opportunity. *Discussed, and such as decision Students actively case studies, and 304 with a grade who have completed Business Administration — i.e. attained business status).*

MIS 409 (4)

Big Data Information Systems

Examines the insights and uses of Cloud computing and Big Data. Focuses on the applications of data models in the Cloud computing and Big Data environments. Describes Big Data, unstructured data types, and their uses. Discussions include impact of factors such as Variety, Velocity, Volume of Big Data. Describes Cloud computing, its uses, benefits, and challenges. Examines the emerging data models for these areas including the relevance of data supersets and importance of correlation vs causality. Examines Big Data applications in different areas such as Retail, Health, Finance, Supply Chain / Logistics, and Marketing. *Prerequisites: MIS 302 or MIS 304 with a grade of C (2.0) or better. Enrollment restricted to students who have completed all lower-division pre-business core (major status in Business Administration - i.e. attained business status).*

MIS 411 (4)

Java Programming for Business Applications

Introduction to data modeling, database design, and database administration. Coverage of the relational database model and construction of a database application using a relational database management system. *Enrollment restricted to students who have completed all lower-division pre-business core (major status in Business Administration -- i.e. attained business status) or Biotechnology majors. Recommended Preparation: MIS 302 or MIS 304 or HTM 304 or ACCT 308 with a grade of C (2.0) or better.*

MIS 484-4 Big Data Information Systems

Spring 2015 Syllabus

Dr. Chetan (Chet) Kumar, PhD
Associate Professor of Information Systems
College of Business Administration
California State University San Marcos
Office Phone: (760) 750-4207
CRN: 22038
Meeting Times: TuTh 1:00PM - 2:50PM
Classroom: MARK 304
Email: ck_courses@csusm.edu
(Students are required to use this email address, along with an email subject line "MIS 484" for emailing the instructor)
Office: MARK 444
Hours: TuTh 12:00PM-1:00PM by appointment

COURSE DESCRIPTION

The aim of this course is to examine insights and uses of Cloud computing and Big Data. It focuses on the applications of data models in the Cloud computing and Big Data environments. This course will describe Big Data, unstructured data types, and their uses. Discussions will include impact of factors such as Variety, Velocity, and Volume of Big Data. It will describe Cloud computing, its uses, benefits, and challenges. The course will examine the emerging data models for these areas. This includes the relevance of data supersets and importance of correlation vs causality. A number of Big Data tools such as Hadoop and NoSQL databases will be illustrated in this course. The course will also examine Big Data applications in different areas such as Retail, Health, Finance, Supply Chain / Logistics, and Marketing. Students will actively participate in this course through lab projects, case, and project presentations.

COURSE OBJECTIVES

Students will learn to:

1. Describe Cloud computing and its impact on decision support, analytics of cloud, costs, and security
2. Discuss the origins of Big Data, Hadoop, and Map / Reduce
3. Describe the impact of $V^3 = \text{Variety, Velocity, Volume}$ and unstructured data on Big Data
4. Recognize the importance of $n=\text{All data superset availability}$

5. Examine the data models for Big Data including evaluating correlation vs causality
6. Apply the software technologies of Big Data including Hadoop and NoSQL databases
7. Analyze Big Data and Cloud computing applications in different areas such as Retail, Health, Finance, Supply Chain / Logistics, and Marketing
8. Evaluate the emerging trends of Big Data and Cloud computing

REQUIRED BOOKS AND REFERENCES

Custom HBS Publishing Course Pack:

<https://cb.hbsp.harvard.edu/cbmp/access/33395297>

Big Data: A Revolution That Will Transform How We Live, Work, and Think, Viktor Mayer-Schönberger, Kenneth Cukier, 2014, Eamon Dolan/Mariner Books; Reprint edition (March 4, 2014), ISBN-10: 0544227751

Big Data: Understanding How Data Powers Big Business, Bill Schmarzo, Wiley; 1 edition (October 7, 2013), ISBN-10: 1118739574

Big Data, Big Analytics: Emerging Business Intelligence and Analytic Trends for Today's Businesses, Michael Minelli, Michele Chambers, Ambiga Dhiraj, Wiley; 1 edition (January 22, 2013) , ISBN-10: 111814760X

COURSE STRUCTURE

Class format: A typical class will consist of 15-20 minutes of Big/Data News presentation and discussion, 50 minutes of lecture discussion, 10 minutes of wrap-up/news articles discussion, and 30 minutes of computer lab and project discussion. Lectures may be comprised of traditional lecture, exercises, discussions, or other activities to enhance your knowledge and understanding of the subject matter. It will be the students' responsibility to ensure you have prepared for the class session by viewing the lecture videos, lecture slides, textbook, and other assigned course material. In such an evolving subject such as Big Data, participation at every stage of the class is highly encouraged to enhance your understanding. The Lab will consist of solving interactive computer-based textbook case studies, solving online practice exercises based on textbook chapters, as well as meetings for the Class Project.

Lecture Materials: In addition to the textbook, materials used in this class include lecture videos, slides and notes, which will be made available via course website. Students should prepare this material before class and may be asked to discuss this in class. The answers will count towards class participation grade.

Lab Exercises: All lab exercise will be based on discovery learning, by which students, individually or as a team, with the instructor's help, will solve assigned problems.

Grading Policy

- o **Grade Components:** Evaluation of student accomplishments and performance will be based on two tests, one class project and presentation, Big/Data News presentations, an individual project (IP) / Homework for labs, four pop quizzes, and class participation

Test I 20%

Test II 20%

Project and Presentation 30%

Big/Data News Presentation 10%

IP / HW for Lab 10%

Pop Quizzes (best 3 quiz grades out of 4) 5%

Class Participation 5%

Total 100%

- o **Grade Distributions:** Based on the scores of accomplishments, the final letter grade is determined as follows:

A 95-100%

A- 90-94%

B+ 85-89%

B 80-84%

B- 75-79%

C+ 70-74%

C 65-69%

D 60-64%

F Less than 60%

COURSE COMPONENTS

Tests: Two tests will be given in class. All tests will be close book and in-class. There will be **NO** make-up test unless an official excuse is submitted (with official documentation) and approved by the instructor under very special circumstances for a verifiable personal or medical emergency.

Big/Data News presentation: Students will make a 10-15 minute presentation at the beginning of class about any chosen Big Data and/or general data related topic. The idea is to share something interesting about data with the class, so that we all learn about new data related developments beyond the formal syllabus. The slides for the Big/Data News presentation have to be emailed to the instructor before it is presented in class. This is a short presentation - students are not expected to do a lot of research.

Assignments and dates for the Big/Data News presentations will be available at the second class. The presentation should touch upon the following questions:

- o What is the Big Data or data related technology in question? How does it work?
- o What are the most valuable business applications of the data related IT?
- o What are the significant limitations of the data technology?

Project: Every student must implement a class project. All project topics must be discussed with and approved by the instructor. Students will be assigned to project topics and Big Datasets in collaboration with instructor, and students are expected to coordinate and work effectively through the semester. All projects must have an in-class presentation which includes demonstrating the project Big Data implementation, done with PowerPoint and Big Data Toolsets. Each project has the following requirements:

Written Paper: A formal written paper describing your project (10 pages double spaced) must be submitted. Below is a sample outline of the Project Report.

SAMPLE FORMAT FOR PROJECT REPORT

- I. PROJECT DETAILS (Page 1)
 1. TITLE OF THE PROJECT
 2. PROJECT DATASET DETAILS
 3. NAME OF STUDENT
- II. PROJECT (Starting on Page 2)
 1. INTRODUCTION
 2. OBJECTIVE(S) / AIM(S)
 3. SCOPE OF THE PROJECT
 4. RESEARCH METHODOLOGY
 5. DATA SOURCES DESCRIPTION
(PRIMARY AND SECONDARY SOURCES)
 6. ANALYSIS/RESULTS/CONCLUSIONS
 7. RECOMMENDATIONS
 8. SCOPE FOR FURTHER WORK
 9. BIBLIOGRAPHY/LIST OF REFERENCES

In Class Presentation: Each individual must present their work to the class (approximately 10-15 minutes) with a PowerPoint and Big Data Project presentation. You may be assigned to small teams for related data sources. The project presentation may be done around a Big Data dataset topic theme to facilitate presentation. Below are instructions for Project Presentation. The Project Presentation Power Point slides are to be emailed to the instructor on its due date before class commences. Make sure to bring your presentation on some secondary storage device (e.g., USB drive / CD, are acceptable) as you will not be allowed to reboot the pc before your presentation. After the presentation, the audience may ask questions and the team should answer. All students are required to be present for all project presentations.

The evaluation of the presentation will be according to the following criteria.

1. Organization of the presentation
 - They clearly state the purpose of the project
 - They have a clear pattern of organization
 - Their presentation stimulates our interest
2. Content of the presentation
 - The topic of their research is appropriate to the situation
 - Their analysis is reasonable and persuasive
 - They show a good example related to the topic
 - Their topic has good technological perspectives
 - Their topic has good managerial perspectives
3. Delivery of the presentation
 - Their presentation is easily heard and visual aids are good
 - All the presenters use the time equally and efficiently

Overall Project Evaluation: Projects will be evaluated based on:

1. Project Interim Deliverables – Have all Project Interim Deliverables been completed thoroughly and turned in on time?
2. Project Report - The Final Report has 20% grade weight, and will be evaluated based on the following criteria.
 - Technical completeness - Does the project address the technical aspects of the topic?
 - Managerial completeness - Does the project address the managerial aspects of the topic?
 - Quality of research - Is the project well researched?
3. Project Presentation - The presentation has 10% grade weight. All students are expected to present.

Individual Project / Homework for Lab: Students will be periodically assigned HW and Lab exercises that have to be completed and submitted to the instructor. The Individual Project / Homework submissions will be collectively graded at the end of the semester. A hard copy of each assignment is to be printed out and submitted to the instructor **before class begins on the due date**. Any submissions turned in after the deadline (5 minutes late is same as 24 hours late) will lose 20% for every 24-hour period that the assignment is late.

Pop Quizzes: Four pop quizzes may be given. The quizzes will be based on the news articles and interactive lab sessions. The best three quiz grades of the four will be used for evaluation. There will be **NO** make-up if you missed a pop quiz due to an absence of a class. The quiz grade will not be counted if you were to not stay for the entire duration of class for any reason.

Class Participation: Students will participate in class discussion so that will help them to reinforce the knowledge gained in the course material, Big Data / News, and project presentations. Students are expected to be prepared for each class and in particular

contribute to class discussions. This means being prepared for class by reviewing the assigned course material prior to the class. Students may be quizzed by the instructor for class preparation. Thorough answers by the students will be a good plus point for the class participation grade. A uniform system will be used for recording class participation. You are expected to attend all scheduled classes and participate in discussions. Attendance may be taken daily and will influence your participation grade.

COURSE POLICIES

Readings: Assigned readings, lecture videos, and lecture slides, should be prepared before class. They are meant to be supplementary to the class session, and very helpful for class discussion and activities.

Assignments/Project Submission: All assignments/projects should be submitted in class on the assigned submission date and time before class session commences. Five minutes late is same as one day late. Late submission will result in a reduction of the grade by 20% for each calendar day for that late assignment.

Academic Integrity: Student will be expected to adhere to standards of academic honesty and integrity, as outlined in the Student Academic Honesty Policy. All written work and oral presentation assignments must be original work. All ideas/materials that are borrowed from other sources must have appropriate references to the original sources. Any quoted material should give credit to the source and be punctuated with quotation marks. Students are responsible for honest completion of their work including examinations. There will be no tolerance for infractions. If you believe there has been an infraction by someone in the class, please bring it to the instructor's attention. The instructor reserves the right to discipline any student for academic dishonesty, in accordance with the general rules and regulations of the university. Disciplinary action may include the lowering of grades and/or the assignment or a failing grade for an exam, assignment, or the class as a whole.

Class Participation and Behavior: We are all adults, so attendance is your responsibility. Note that Class Participation forms an important component of the final grade. Students can only score well in that if they regularly attend and actively participate in class discussions. Being prepared for class by reviewing the assigned course material before class is an important part of class participation. Therefore students may be quizzed by the instructor for class preparation. Thorough answers by the students will be a good plus point for the class participation grade. Each student brings experience that others in the class can benefit from and thus individual attendance can enhance the learning experience of the entire class (including the instructor). Students are expected to respect the rights of their classmates by exhibiting behavior that is conducive (or not disruptive) to the learning environment of the classroom. Cell phones should be turned

off or put on silent ring or vibrate. Phone calls should not be made or taken during the class period. If there is an emergency situation that prevents you from adhering to this policy, please see your instructor to discuss it as soon as possible. Students are expected to refrain from using computers during class time for activities that are NOT related to the class topic being discussed that day. These activities include, but are not limited to, playing videogames, instant messaging, social networking, email, etc. If you miss a class, it is your responsibility to obtain notes from a fellow student.

University Writing Requirement: CSUSM has established a 2500-word writing requirement (10 pages) for each course. This requirement will be met primarily via the final project, homework assignments, and essay questions in examinations. All reports should be free of grammatical and spelling errors, typed, and as concise as possible.

Students with Disabilities. It is this institution's policy to not discriminate against qualified students with documented disabilities. Persons with disabilities are welcome to attend all classes, programs, and events. If you need accommodations, or have questions about access to buildings where learning activities are held, please contact the Office of Disabled Student Services (DSS) in Suite 5205 in Craven Hall, or via phone at (760) 750-4905; (760) 750-4909 (TDD), or via email at dss@csusm.edu. If you need assistance during a class, program, or event, please contact any member of the DSS staff. If you have a disability-related need for modifying your exam or test environment, notify the instructor during the first week of classes so that your needs can be accommodated in time. You will be asked to present documentation from DSS that describes the nature of your disability and the recommended remedy.

Confidentiality: In order for us to have a free and open learning environment, each student is expected to respect the confidentiality of any information or material shared in class discussion.

E-mail: All students are required to obtain a CSUSM email account. If you have any questions about the course or need assistance, please email me through the above mentioned email at any time.

Special Note: Keep your graded work until you receive your official grade, for there might be recording errors by the instructor.

Big Data Course Schedule

(tentative may be updated, refer Cougar Courses for updated deliverable dates)

Date	Topic	Tasks (refer Cougar Courses for updated deliverables due dates)
Jan 20	Course Overview Big Data and Cloud computing introduction	
22	Ch 1 Big Data Introduction Assigned Readings 1. Thriving in a Big Data World Alden M. Hayashi Jan 1, 2014 MIT SMR Product #:SMR472-PDF-ENG 2. Big Data: The Management Revolution Andrew McAfee; Erik Brynjolfsson Oct 1, 2012 Harvard Business Review Product #:R1210C-PDF-ENG	Hwk1: One page Summary of Ch 1 Assigned Readings
27	Ch 2 Cloud Computing Introduction Assigned Readings 1. What Every CEO Needs to Know About the Cloud Andrew McAfee Nov 1, 2011 HBR Product #:R1111J-PDF-ENG 2. http://www.ibm.com/cloud-computing/us/en/what-is-cloud-computing.html	Hwk2: One page Summary of Ch 2 Assigned Readings Due: Hwk1
29	Ch 2 Decision support/Analytics of cloud	
Feb 3	Ch 3 Big Data: Origin of Hadoop Assigned Readings 1. Now, Big Data: A Revolution, Viktor Mayer-Schönberger book, Ch 1 2. Big Data Business Opportunity, Big Data: Understanding, Schmarzo book, Ch 1 3. Understanding Your Value Creation Process, Big Data: Understanding, Schmarzo book, Ch 7	Hwk3: Half page Summary of Ch 3 Assigned Readings #1. Due: Hwk2
5	Ch 3 Big Data: Origin of Map / Reduce Assigned Readings 4. Big Data Technology, Big Data Big Analytics, Minelli book, Ch 3 5. Big Data Architecture, Big Data: Understanding, Schmarzo book, Ch 11	Hwk4: One page Summary of Ch 3 Assigned Readings #4.

10	<p>Ch 4 V³ = Variety, Velocity, Volume</p> <p>Assigned Readings</p> <ol style="list-style-type: none"> 1. Correlation, Big Data: A Revolution, Viktor Mayer-Schönberger book, Ch 4 2. Organizational Impact of Big Data, Big Data: Understanding, Schmarzo book, Ch 4 	<p>Hwk5: Half page Summary of Ch 4 Assigned Readings #1.</p> <p>Due: Hwk3</p>
12	<p>Ch 5 n=All data superset</p> <p>Assigned Readings (Data Science Topics Review)</p> <ol style="list-style-type: none"> 1. Grouped Data Histogram 2. Descriptive Statistics I 3. Descriptive Statistics II 4. Correlation 5. Simple Linear and Multiple Regression 	
17	<p>Ch 6 Big Data Model: Structured Data</p> <p>Assigned Readings (Structured Data Database Topics Review)</p> <ol style="list-style-type: none"> 1. ERD 2. Relational Model 3. SQL I 4. SQL II 	Due: Hwk4
19	Ch 6 Big Data Model: Impact to causality	Hwk6
24	Ch 6 Big Data Model: Impact to causality	Hwk6
26	Ch 6 Big Data Model: Sentiment Analysis	Due: Hwk5
Mar 3	<p>Big Data Case Study</p> <p>Kyruus: Big Data's Search for the Killer App Robert F. Higgins; Penrose O'Donnell; Mehul Bhatt Dec 5, 2012 HBS Case Study Product #:813060-PDF-ENG</p>	
5	Review Session for Exam 1	Due: Hwk6
10	Test 1	
12	<p>Cloud Computing Case Study</p> <p>SAP 2014: Reaching for the Cloud Karim R. Lakhani; Marco Iansiti; Noah Fisher Mar 14, 2014 HBS Product #:614052-PDF-ENG</p>	Hwk7
17	<p>Ch 7 Big Data Technologies 1</p> <p>Ch 7 Big Data Technologies 2</p>	
19	Ch 7 Big Data Technologies 3	Hwk8 Due: Hwk7
24	Ch 8 Unstructured data	

26	Ch 9 Big Data Scalability	Hwk9 Due: Hwk8
31	No Class Spring Break	
Apr 2	No Class Spring Break	
7	Ch 10 Application of Big Data: Healthcare Ch 10 Application of Big Data: Supply Chain / Logistics	Hwk10
9	Ch 10 Application of Big Data: Finance Ch 10 Application of Big Data: Marketing	Hwk11 Due: Hwk9
14	Ch 11 Big Data toolset: NoSQL databases vs RDBMS, Hadoop	
16	Ch 11 Big Data toolset: Map / Reduce	
21	Ch 11 Big Data toolset: Hive	Due: Hwk10
23	Project Consultation	
28	Big Data topic presentation	Due: Hwk11
30	Project Presentations	
May 5	Project Presentations Review Session for Test 2	
7	Test 2	
12	Final Project Report submission	Final Project Report due