Subject: Business – Management	**Number:** EBGN 598

Course Title: OPERATIONS AND INFORMATION SYSTEMS

Semester/Year: Fall 2019

(Preliminary – subject to final version)

Instructor:
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Office hours:	Monday: 3:30-5:30pm
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	Wednesday: 3:30-5:30pm
	Thursday: 9:00 – 12:00 noon
	Friday:

Class meeting days/times: Monday & Wednesday, 2:00 – 3:15pm.

Class Location: TBD

Course Web Pages: [CANVAS](#)

Instructional Activity: 3 hours lecture Semester Hours: 3

Course Designation: EBGN 598 Operations and Information Systems

Course Description

Operations and Information Systems is a special topics course for ETM and approved undergrad students who wish to learn about how businesses work and the information systems (IS) that enable the business operations. Students will gain an understanding of the businesses that they will shortly be involved with as they start their first career positions. Hands-on exercises to learn how to design processes, trouble shoot operational problems with root cause analysis, and a statistical process simulation will be provided during the course. Job opportunities will be covered that support operations, IS and business improvements with Six Sigma initiatives. Business Cases will be used to illustrate critical business situations and decision-making techniques.

This course focuses on business operations for manufacturing, service industries, mining and process/petroleum industries; as well as the elements of the information systems / datacenters that support them. Key operations topics include: operations strategy and positioning, manufacturing process types, Lean Manufacturing, distribution, process design, productivity, optimization, control system theory, quality control, Total Quality Management (TQM), forecasting and capacity planning, and Six Sigma. Key information systems topics include: trends in information technology, applications, Enterprise Resource Planning (ERP), networks, and an emphasis on cyber-security.

The student will also learn about the management approach and techniques for operations management and information systems management that support the business goals. An overview of operations change management will be provided with emphasis on the challenges and successful techniques.

Prerequisites: None.

<u>Required Materials</u>

Textbook/ ebook - Operations Management: An Integrated Approach, 6th Edition
R. Dan Reid and Nada R. Sanders. Available in the bookstore or on-line at
https://www.wiley.com/WileyCDA/Section/id-831105.html
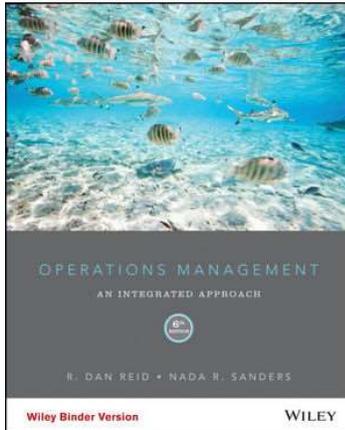
Textbook/ ebook – [Dynamic Value Chains – Visualizing and Optimizing Your Business](#)
D. N. Culbreth. Hardback, paperback and eBook available at Amazon (use link in the book title)
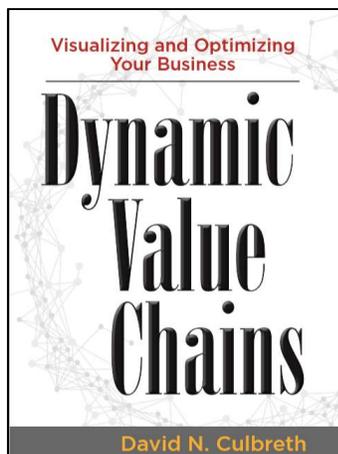
Software/ Materials – Harvard Business Review articles, Harvard Business Publishing articles, and a Harvard Business Publishing simulation(s).

<u>Student Learning Outcomes</u>

At the end of the course, students will:

- See the big picture of a company, like a CEO perceives his business.
- Understand a variety of value-adding business models and their associated operations
- Learn about operations for manufacturing, service, petroleum, distribution, aerospace and software development organizations.
- Understand the role and list the components of information systems and datacenters.
- Review cybersecurity trends, challenges and solutions

Apply workflow tools and design processes.

Analyze a quality control system with a statistical process control simulation.

Explain and evaluate operations management strategies and metrics.

List the elements of Six Sigma methodology and apply root cause analysis

Explain the key concerns of information systems management

Describe the interaction of operations and information systems to support the business goals

Engage in multiple case studies that support the lecture materials

Topics Covered:
1. High level business organization
2. The development of businesses over time
3. Product design
4. Operational models – multiple industries
5. Lean Manufacturing
6. Process design and flow charts
7. Control systems and dynamics
8. Quality control and Total Quality Management (TQM)
9. Six Sigma and root cause analysis
10. Information systems and enterprise applications
11. Cybersecurity
12. Information Technology Management
13. Operations strategy and management
14. Competitive strategies
15. Change management
16. Modeling and optimization

Grades and Grading Components	Points
1. Draw a business	25
2. Value Chain Design	50
3. Industry Research Paper	75
4. Midterm Exam	200
5. Case studies, readings - Quizzes	100
6. Final Project – Case based	400
- Final Project Document (300 points)	
- Final Project Presentation (100 points)	
7. Attendance/Participation	150
	1000

GRADES

Points	Grade	Points	Grade
934-1000	A	734-766	C
900-933	A-	700-733	C-
867-899	B+	667-699	D+
834-866	B	634-666	D
800-833	B-	600-633	D-
767-799	C+	<600	F

1. **Assignments and In-Class Writings** – A variety of individual and team assignments will be made throughout the semester. Some of these will be completed in-class while others will be completed prior to class. The purpose of these assignments is to reinforce the learning aims and to ensure that students remain current in the material, which is key to one's class contribution.
2. **Quizzes** – The quizzes will be scheduled, closed-book, in-class test or open-book, timed on Canvas, and will require that you be caught up with the reading.
3. **Midterm Exam** - This course will have a mid-term exam. The exam will consist of multiple choice, short answer questions and one essay question. Exam date: Wednesday February 27, 2019.
4. **Case Studies, readings – Quizzes** - You are encouraged to prepare prior to coming to class to discuss the text and case material. It is expected that you have read everything assigned.
5. **Final Project** - A business case will be assigned 6 weeks before the end of the semester. You will be asked to conduct analysis, industry research, and write an in-depth paper that includes value-added operational strategies and detailed techniques for operations and information systems based on all that you have learned this semester. After the paper is submitted you will present your paper to the class with a short Powerpoint presentation.
6. **Attendance/Participation** – Attendance will be taken in each class and will account for 50% of this segment grade. Participation - it is especially valuable and appreciated when you come to class with questions about the readings. Your interest and participation in class will be the primary factors for this grade. Your class participation will be worth 50% of this segment.
   All connectivity (mobile phones, PDAs, pagers, and other electronic devices) must be stored away during class. Use of laptops in the class is a privilege, not a right. Laptops are to be used for class activities only. If you are seen surfing, chatting, e-mailing, etc., you may lose laptop privileges and receive a negative mark for class contribution.
7. **Late assignments** – assignments are due by the start of class of their due date. A 10% penalty will be assessed for assignments turned in before 12:00 midnight that day. An additional 10% will be taken off for each additional day that it is late.

* Course content subject to change. All changes will be announced in class and online. It is your responsibility to keep up with posted announcements. A detailed calendar of assignments is available on Blackboard

Absence Policy: Generally, students are expected to attend every class. Your participation in each class benefits each student in the class as we all learn from each other's contributions, experiences and ideas. It is this sharing of ideas and differing perspectives communicated by class discussions that separate the in-class experience from one that could be provided from merely reading the assigned materials. Therefore, excused or unexcused absences will reflect negatively on your in-class discussion/participation grade component.

The Student Absences webpage outlines CSM's policy regarding student absences. It contains information and documents to obtain excused absences.

Note: All absences that are not documented as excused absences are considered unexcused absences. Faculty members may deny a student the opportunity to make up some or all of the work missed due to unexcused absence(s). However, the faculty members do have the discretion to grant a student permission to make up any missed academic work for an unexcused absence. The faculty member may consider the student's class performance, as well as their attendance, in the decision.

In the case of an absence, the student is responsible for determining what work was missed and for putting forth a good faith effort to review the material on their own.

Diversity and Inclusion:

At Colorado School of Mines, we understand that a diverse and inclusive learning environment inspires creativity and innovation, which are essential to the engineering process. We also know that in order to address current and emerging national and global challenges, it is important to learn with and from people who have different backgrounds, thoughts, and experiences.

Our students represent every state in the nation and more than 90 countries around the world, and we continue to make progress in the areas of diversity and inclusion by providing Diversity and Inclusion programs and services to support these efforts.

Students with Disabilities:

The Colorado School of Mines is committed to ensuring the full participation of all students in its programs, including students with disabilities. If you anticipate or experience any barriers to learning in this course, please feel welcome to discuss your concerns with me. Students with disabilities may also wish to contact Disability Support Services (DSS) to discuss options to removing barriers in this course, including how to register and request official accommodations. Please visit their website at disabilities.mines.edu for contact and additional information. If you have already been approved for accommodations through DSS, please meet with me at your earliest convenience so we can discuss your needs in this course.

Accessibility within Canvas:

Read the Accessibility Statement from Canvas to see how the learning management system at the Colorado School of Mines is committed to providing a system that is usable by everyone. The Canvas platform was built using the most modern HTML and CSS technologies, and is committed to W3C's Web Accessibility Initiative and Section 508 guidelines.

Discrimination, Harassment, and Title IX:

All learning opportunities at Mines, including this course, require a safe environment for everyone to be productive and able to share and learn without fear of discrimination or harassment. Mines' core values of respect, diversity, compassion, and collaboration will be honored in this course, and the standards in this class are the same as those expected in any professional work environment. (More information can be found here.) Discrimination or harassment of any type will not be tolerated. As a participant in this course, we expect you to respect your instructor and your classmates. As your instructor, it is my responsibility to foster a learning environment that supports diversity of thoughts, perspectives and experiences, and honors your identities. To help accomplish this:

Course rosters are provided to the instructor with the student's legal name. I will honor your request to address you by an alternate name or gender pronoun. Please advise me of this preference early in the semester so that I may make appropriate changes to my records.
If something is said or done in this course (by anyone, including myself) that made you or others feel uncomfortable, or if your performance in the course is being impacted by your experiences outside of the course, please report it to:
Me (if you are comfortable doing so)
Wellness Center- Counseling (https://www.mines.edu/counseling-center/)
Speak Up (https://www.mines.edu/speak-up/) – Anonymous Option

In this course, we will cultivate a community that supports survivors, prevents interpersonal violence, and promotes a harassment free environment. Title IX and Colorado State law protects individuals from discrimination based on sex and gender in educational programs and activities. Mines takes this obligation seriously and is committed to providing a campus community free from gender and sex-based discrimination. Discrimination, including sexual harassment, sexual violence, stalking, and domestic violence, is prohibited and will not be tolerated within the Mines campus community. If these issues have affected you or someone you know, you can access the appropriate resources on the Mines Title IX website. You can also contact the Mines Title IX Coordinator, Camille Torres, at 303.384.2124 or titleix@mines.edu for more information.

It's on us, all of the Mines community, to engineer a culture of respect.

Policy on Academic Integrity/Misconduct:

The Colorado School of Mines affirms the principle that all individuals associated with the Mines academic community have a responsibility for establishing, maintaining an fostering an understanding and appreciation for academic integrity. In broad terms, this implies protecting the environment of mutual trust within which scholarly exchange occurs, supporting the ability of the faculty to fairly and effectively evaluate every student's academic achievements, and giving credence to the university's educational mission, its scholarly objectives and the substance of the degrees it awards. The protection of academic integrity requires there to be clear and consistent standards, as well as confrontation and sanctions when individuals violate those standards. The Colorado School of Mines desires an environment free of any and all forms of academic misconduct and expects students to act with integrity at all times.

Academic misconduct is the intentional act of fraud, in which an individual seeks to claim credit for the work and efforts of another without authorization, or uses unauthorized materials or fabricated information in any academic exercise. Student Academic Misconduct arises when a student violates the principle of academic integrity. Such behavior erodes mutual trust, distorts the fair evaluation of academic achievements, violates the ethical code of behavior upon which education and scholarship rest, and undermines the credibility of the university. Because of the serious institutional and individual ramifications, student misconduct arising from violations of academic integrity is not tolerated at Mines. If a student is found to have engaged in such misconduct sanctions such as change of a grade, loss of institutional privileges, or academic suspension or dismissal may be imposed.

The complete policy can be found in the Mines' Policy Library.