

COURSE SYLLABUS

MOR 554: LEADING INNOVATION & CHANGE

MOR 554: LEADING FOR INNOVATION & CHANGE

PROFESSOR MICHAEL MISCHE

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Date: August 20, 2017
(Updated & revised)
Section: 16700
Semester: FALL 2017
Class Meets: Wednesday Evening
Class Dates: First Class: 08/23/17
Last Class: 11/29/17
Class Time: 6:30 to 9:30 PM
Class Room: JFF 236

Final Exam: 12/6/17; 7 - 9 PM
(per USC Schedule)

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Office Hours: *As Posted on Black Board and:*
Tuesday & Thursday
Coffee w Mische 7:30 – 8:00 AM
JKP/JFF Café/Courtyard
MBA's Only – 5:00 to 6:00 PM
HOH 415
Monday, Tues, Wed, & Thur.
10:30 to 12:30.

Friday:

By appointment only.
Any time after class & by appointment.
Please feel free to email or text me at any time with any questions, ideas, comments or needs (Text is better).

Email: mische@marshall.usc.edu

Mobile: Provided in the class

“If a company had only competency, that competency must be the ability to innovate.”
Peter Drucker

1.0 COURSE DESCRIPTION & PROFESSOR INTRODUCTION

1.1 Course Description

The late Peter Drucker once said that innovation is perhaps the most essential competency that a firm can have. How true. Firms, governments and societies that fail to innovate, invariably and inevitably, *fail*. Innovation is a great driver of change and transformation and as such, it must be a core competency of any great organization, government or society and endemic to the culture of the organization and its leadership.

Apple, Intel, Cisco, Tesla, Boeing, Amazon, GE occupy different industries and present very different value propositions to their markets, investors, and customers. Yet these companies all share two characteristics: (1) the ability to *innovate*, and (2) the ability to *change*.

MOR 554 is a course about how firms go about the process of *leading* for creating, managing, and implementing innovation in organizations. In this course, we take a broad, C-suite perspective of innovation and how to best organize, implement, and operationalize innovation for optimal strategic and monetary value. As this is a “landscape” approach to leading innovation, we discuss a spectrum of innovation and R&D concepts, and issues in the context of the boardroom, what it means to innovate and factors of success and failure.

MOR 554: LEADING INNOVATION & CHANGE

PROFESSOR MICHAEL MISCHE

KEY TOPICS & SUBJECTS

Definition of innovation
Emergent, incremental, continuous innovation
Disruptive vs. discontinuous vs. displacement innovation
Sources of innovation
Creating innovation
Leading innovation
Measuring innovation
Understanding the social and ethical consequences of innovation
Using innovation to achieve organizational change
Cultural implications of innovation
Innovation Models
Accelerators & incubators
Collaboration & innovation
PDP and PDM in innovation
Organizational structures for innovation

In MOR 554, we ask and address some of the *seminal* management and investor questions related to innovation, such as:

- (1) What is innovation?
- (2) How is innovation best created and achieved in a company?
- (3) Under what conditions should innovation be attempted?
- (4) Why do so many innovation projects fail?
- (5) How do co-opetition and collaboration affect innovation?
- (6) What are the sources of innovation?
- (7) How do emergent, incremental, continuous, disruptive, and destructive innovation differ?
- (8) How is innovation best measured?
- (9) What types of organizational structures are best aligned/supportive of/with high-performance innovation?
- (10) What is the role of an innovation incubator?
- (11) How do innovation accelerators work?
- (12) How do “open” and “closed” innovation differ and under what conditions should each be used?

1.2 Professor Introduction

As an educator and mentor, there is nothing more satisfying to me than to see you highly successful in this class, and in your career. As a former consulting partner in KPMG, principal in AT Kearney, and CEO of a consulting firm, I teach MOR 554 from a pragmatic perspective that stresses leading innovation for strategic advantage and optimal monetization. Using a *Socratic* method, I teach the material necessary to function successfully as an executive responsible for innovation. My teaching style is direct, fluid, and purposeful. I am open and welcome the rigorous interrogation of facts and data, constructive debate, challenging questions, lots of discussion, and collaborative learning. My primary professional objectives and personal obligations for this course include:

- (1) Transferring the knowledge and skills necessary for leading innovation,
- (2) Helping prepare you for a career in the C-suite,
- (3) Helping position you for success as a leader,
- (4) Ensuring, through formal and informal assessment processes, that you demonstrate the competencies, knowledge and critical thinking skills emphasized and taught in 554, and
- (5) Contributing to USC Marshall's reputation as one of best B-schools in the nation.

The material in this course originates from and incorporates academic research/literature, my 30 plus years of management consulting experience, ELC-simulations, and a specialized project performed by students in MOR 554. As USC's practicing consulting professor, I also have an active portfolio of current consulting clients which helps to ensure that the course design, pedagogy, materials, and subject matter are all relevant.

2.0 COURSE DESIGN, CONTENT & SUBJECT MATTER

Composed of five modules, MOR 554 has been organized as a progressive course. That is, the course content begins with basic themes, definitions and frameworks and then evolved in application and discussion using cases and readings. This course design allows for lively debate and discussion related to leading innovation and the impact of innovation on society, the firm, and individuals. Specifically:



MOR 554 is not a course on “how to be innovative or creative.” MOR 554 is a course dedicated to the frameworks, tools, and methods necessary for leading innovation in an organization. The course design and contents have been specifically developed from the “CEO perspective” to provide you, the MBA, with the skills necessary to manage and lead innovation and make rational and sound decisions about innovation and innovation projects in your organization. Specific course content by module includes, but is not limited to:

- **Module 1: Understanding Innovation.** In this module, we discuss the basics of innovation, issues surrounding innovation, challenges of innovating, social impact of innovation, general risks of innovation, etc. Some of the topics addressed in this module include, but are not limited to:
 - (1) Defining innovation, understanding the role of innovation,
 - (2) Understanding innovation and organizational culture, innovation and organizational performance,
 - (3) Understanding how to use innovation as strategy,
 - (4) Defining exploration vs. exploitation in innovation, and
 - (5) Defining disruptive, destructive, and displacement innovation.

- **Module 2: Creating Innovation & The Product Development Process.** In this module, we discuss the process of leading the innovation effort to create products and processes. Some of the topics addressed in this module include, but are not limited to:
 - (1) Identifying and understanding the sources of innovation,
 - (2) Defining the strategic intent and implications of transformational, episodic and transactional innovation,
 - (3) Defining and discussing a standard PDP phase gate methods vs. spontaneous methods for managing innovation and product development,
 - (4) Leading practices designed to foster creativity, open innovation vs. closed innovation,
 - (5) Understanding internal barriers to innovation and how to best address resistance, and
 - (6) Assessing the strategic and financial impact of innovation.

- **Module 3: Leading Innovation & Change.** In this module, we examine leadership and management behaviors, dynamics and challenges related to leading innovation in a modern organization. Some of the topics addressed in this module include, but are not limited to:
 - (1) How to form innovation teams,
 - (2) Understanding team behavior & dynamics,
 - (3) How to manage innovation teams for high-performance results,
 - (4) How to best measure team performance,
 - (5) Discussion various tips & traps for leading innovation,
 - (6) Factors and considerations in selecting team members, and

- **Module 4: Case Studies in Innovation: Incubators, Accelerators & Impediments.** In this module, we explore various “models” for innovation and to best implement and lead them for innovation success. Some of the topics addressed in this module include, but are not limited to:
 - (1) How and when to deploy incubators and accelerators,
 - (2) Implementation consideration in using incubators and accelerators,
 - (3) Understanding how and when to use DARPA, “Skunk Works,” and Accelerators for innovation,
 - (4) How to identify, assess and address organizational, legal, and cultural impediments to innovation,
 - (5) Assessing environmental factors and how they affect innovation.

- **Module 5: Social Implications of Innovation.** In this module, we discuss the social implications of innovation and how innovation influences daily lives, choices, and politics. Some of the topics addressed in this module include, but are not limited to:
 - (1) Understanding how innovation and society interact,
 - (2) Examining ethical issues of innovation,
 - (3) Determining the role of social entrepreneurship and innovation
 - (4) Creating social innovation;

- (5) Understanding disruptive innovation's impact on society, and
- (6) Sustainability issues in innovation.

The various topics and weekly schedule of readings, assignments and cases by module is *published separately* as an Excel Spreadsheet and posted on Blackboard as "Syllabus > Weekly Assignments by Module/Topic."

- **ELC-Simulation.** Complementing the objectives and concepts of MOR 554 is a specialized ELC-Simulation involving the formulation of strategy and allocation of resources and capabilities to a hypothetical innovation project. In this simulation, teams of MBA students compete against each other for earnings related to the production of electrical storage devices (batteries) in a "winner take all" challenge. Growth in earnings are rewarded, while failure is equally recognized. The game is dynamic, challenging, complex, and provides the class with a valid, referential experience in making innovation decisions and allocating limited resources to achieve strategic innovation intentions and objectives. (See Section 9.0.)

3.0 LEARNING OBJECTIVES & EXPECTED OUTCOMES

MOR 554 is oriented to practical business matters of growth and demise. In MOR 554, students are **expected and required to participate in class**. Learning teams, videos, cases, client projects, individual assignments, formal cases, and a course reader may all be used in various forms to facilitate your development and transfer the appropriate knowledge.

This course will help you develop skills and thought processes related to leading innovation for strategic advantage and change. At the completion of the course, you should be able to:

1. Demonstrate your knowledge of innovation and how innovation creates strategic and economic advantages.
2. Demonstrate your understanding of the various types of innovation and sources of innovation.
3. Present your managerial acumen and efficiency as related to the application of course concepts and results from the ELC-Simulation
4. Demonstrate your proficiency with the tools and methods available to initiate and lead strategic innovation
5. Demonstrate your critical thinking and analytical skills as applied to course concepts and content.
6. Enable you to demonstrate an understanding the basic concepts related to managing innovation in different industries and scenarios.
7. Position you to better demonstrate your understanding of how to best measure innovation and allocate limited resources to innovation to generate optimal results.

At the conclusion of the course you will have a better understanding of how to manage and lead innovation for high-performance in an organization.

4.0 COURSE COMPONENTS

4.1 Academic Components

MOR 554 is composed of 5 major academic components. Each component is designed to provide you with a specific learning experience that supports a particular set of objectives, needs, skills, tools, analytical framework and knowledge essential to your development as a Marshall student and MOR 554. Specifically:

1. Classroom Component

This is a highly interactive class that provides you with a great opportunity to learn, challenge yourself and others and develop your critical thinking, analytical skills, management *acumen* and communication talents. Come to class ready to work, participate, contribute, compete and have *fun*. Classes are similar to any business or boardroom, they are direct and facilitative and provide a forum to challenge the professor, your classmates and most importantly, yourself...**BE ENGAGED**.

Lectures are important...most of what you will learn is lecture based, collaborative *and* reading, case or project related. The readings either “set the stage,” reinforce concepts, or provide a different perspective to the lectures. Come to class prepared to contribute, challenge and be challenged and take every advantage to challenge me, learn, explore and extend your knowledge.

- **WARNING! DO NOT RELY** on PowerPoint posting and BB...I rarely use slides and I rarely post lecture notes. I do not need, nor do I rely on slides. I lecture and *teach* in the classroom and most of what you will learn will be from the lectures my 30+ years of experience, as well as our collective interactions in the classroom...not BB and PPTs.

2. Readings & Cases Component

The readings for this course have been carefully selected and represent a broad spectrum of ideas, concepts, research, and professional perspective. We will discuss assigned readings and or aspects of the individual projects during designated classes. The readings and discussions provide us the opportunity to learn, practice, hone our perceptions, advance our analytical abilities, and to learn directly and vicariously from others' situations and each other. It is essential that you procure the proper course reader and do the readings.

3. Team Participation & Contribution Component

Teamwork in management consulting is *essential*. Learning how to function as an effective team member and leader are prerequisites to management level positions in any consulting firm. Your functioning and contributions to the efforts of your team are essential components of your development as a future leader of organizations. Participation on a team provides you with an opportunity to lead, be an individual contributor, and function as an effective team member. More importantly, learning how to create, manage, and sustain collaborative teams are important management and consulting skills. Your active participation and contribution to your team project is critical to the success of your consulting project and is included in your final grade,

4. Intellectual Component

This component focuses your cognitive and decision making abilities. The intellectual component includes reading, learning models of behavior, design, and leadership, discussing ideas from the readings and from other sources. As indicated, in this class we will focus on 4 dimensions of learning, knowledge transfer and skill development:

- a. **Factual Knowledge** is knowledge that is basic to specific disciplines. This dimension refers to essential facts, terminology, details or elements students must know or be familiar with in order to understand a discipline or solve a problem in it.
- b. **Conceptual Knowledge** is knowledge of classifications, principles, generalizations, theories, models, or structures pertinent to a particular disciplinary area.

- c. **Procedural Knowledge** refers to information or knowledge that helps students to do something specific to a discipline, subject and area of study. It also refers to methods of inquiry, very specific or finite skills, algorithms, techniques, and particular methodologies.
- d. **Metacognitive Knowledge** is the awareness of one's own cognition and particular cognitive processes. It is strategic or reflective knowledge about how to go about solving problems, cognitive tasks, to include contextual and conditional knowledge and knowledge of self.

5. Office Hours & Support Component

I love teaching and ‘creating’ management consultants...nothing is more rewarding than to see my students successful. I’m here to support your efforts, assist you in understanding course content, and facilitate your success in this class.

- My office is located in Hoffman Hall (HOH) Room 415.
- I am here to help make you successful and I take that responsibility and commitment seriously. Please feel free to come forward at any time with any questions, needs, suggestions, or ideas to make your learning experience more meaningful. I’ll do my best to be responsive, communicative and facilitative and to help you succeed in this course and in securing employment or your career. Always feel free to text or call on my cell at any time.
- I’m here (on campus) over 40 hours a week. I’ve published both my office hours and teaching schedule on BB for you...always feel free to come to one of classes.

4.2 Mentoring Component

Reach out to me at any time! Come visit me during office hours or at “Coffee with Mische.” I am also readily accessible via text messaging. I prefer texting to emails simply due to the volume of emails that I receive. I usually respond to texts in relatively short order.

5.0 REQUIRED MATERIALS

MOR 554 uses a **Harvard Coursepack**. I have selected readings and organized the Coursepack to support the concepts and key themes of MOR 554.

The **Harvard Coursepack** contains the formal business cases, readings and articles that we will use throughout the semester. The Coursepack is **MANDATORY**. I update the coursepack each semester for new articles and readings that are more “on point” and or more appropriate for the evolving needs of the course. The Coursepack can be purchased and downloaded via the link below:

COURSEPACK URL:

<http://cb.hbsp.harvard.edu/cbmp/access/65840579>

Note: This is a new and updated coursepack. It contains additional readings and cases.

I will also post an occasional ad-hoc reading on BB. The intent of these ad-hoc materials is not to increase course loads, but to embellish and advance the learning process and improve your educational experience at Marshall...therefore...read them!

Other resources used or referred to in this course include, but are not limited to:

- **USC'S 5-Step Critical Thinking Initiative**
<http://info.marshall.usc.edu/faculty/critthink/Supplemental%20Material/5%20Step%20USC-CT%20Problem%20Solving%20Process.pdf>
- **USC's Statement of Ethics**
https://about.usc.edu/files/2011/07/USC_Code_of_Ethics_2004.pdf
- **USC's Final Examination Schedule**
<http://classes.usc.edu/term-20173/finals/>
- Mische, Michael A. *Strategic Renewal: Organizational Change for Competitive Advantage*. Prentice-Hall. (2000). ISBN-0-13-021919-3.

6.0 COURSE EXPECTATIONS

6.1 Summary of My Expectations

Do the work! No excuses. Please let me be clear, *come to class prepared, stay focused in class, and engage in class discussions*. I expect Marshall students to stay current with business issues by accessing CNBC, Bloomberg and other business news services. Also, please take a few minutes to reflect on my **4 P's of success**:

PREPARE for class. Preparation is essential to client service & professionalism. Concentrate on learning and not your grade! "*Great grades follow great learning.*"

PARTICIPATE in class. Consulting is communication based and the most successful consultants are also exceptional communicators.

PUNCTUAL. USC costs lots of money...be on time & maximize your value.

PROFESSIONAL. Be a professional learner...your job is to learn.

6.2 Simple Rules to Help You Succeed in My Class!

Here's a few tips on how to be successful in this class:

1. **Texting & Emailing**. Please don't text or email in class. It's incredibly distracting to faculty and to others and frankly it's...rude. If you must text, kindly remove yourself from the classroom and do so outside. If I find that the texting or emailing is a distraction to our collective efforts, I will ask you to leave....no negotiation necessary. *Stay focused!*
2. **Preparation**. Preparation is essential to success. I expect you to be prepared for each class and come prepared to participate, contribute and learn. Furthermore, as Marshall degree candidates you are expected to meet and satisfy all due dates and deadlines. *Do the work...take the initiative.*
3. **Participation**. This is a highly interactive course, which is reflective of the realities and the demands of management consulting. Consultants must communicate with their

clients. Given the nature of the course and my teaching style, it will be relatively easy to participate.

- You are encouraged to explore various ways to express yourself, engage in discussions, and present and argue your ideas. Participate, debate, contribute, learn and be engaged...your grade is partially based on it! Inevitably, some students will not agree with you, and you may be asked to defend your argument. That's great! This is the place to learn and take some chances, However, let's all try to endeavor to direct criticism and comments to the substance of the topic and argument, and not at individuals.
- The quality of your learning experience during our class discussions will be directly determined by three factors: (1) your degree of preparation, active listening, and participation, (2) your classmates' preparation, listening, and participation, and (3) my teaching effectiveness. Let's do our best to ensure that effective learning has been achieved and that the relevant knowledge has been transferred.
- If, for some reason you are not inclined to engage in class discussions, then write your thoughts and contributions in the form of a memo to me. Your memo doesn't have to a novel or dissertation...just short, to the point and expressive of your participation and learning.
- Each of us is different in how we express our participation, so a wide range of participation activities is acceptable, but performance must be demonstrated individually, within the teams, and in the class. Each person will be subjectively evaluated by the team and by me as to his or her preparation for the sessions in addition to his or her contribution to the team performance. *This is world-class, elite university, so use and seek every opportunity to get better here, at Marshall, so you can perform better in the C-suite later!*

4. **Professionalism.** Being a professional is a lifelong commitment to excellence. Be on time. Be respectful and supportive one another. Do your work, be prepared. Take pride in your work. Come to class ready to learn, contribute and have some fun. Make every second count for something meaningful. Make every second count for something meaningful. Get involved, debate, challenge, argue, take sides, be passionate and be resolute and always *COMPETE*...but remember that each of us is part of USC and therefore members of the Trojan Family and Trojans are *winner*s!!!
5. **Focus.** During class time and during your team meetings and research, it is critical to be focused on the task, topic, case, etc., that is assigned. This would include not reading the DT, engaging in side conversations, working on another class, checking your texts, etc. Focusing requires energy, concentration, and your intention to carry your share of the responsibility to make your team and the class effective for everyone. *Stay in the moment!*
6. **Punctual.** Everyone at some time might be a little late or miss a class. As Marshall degree candidates, USC expects you to be responsible and let faculty know in advance when you will miss a class wherever possible, or to follow-up when it is not possible. As lectures are important, excessive absences (more than three) could adversely affect your

final grade in the course. *You worked hard to get to USC...come to class on time and ready to work!*

7. **Attendance.** Be engaged in the class. Class attendance is absolutely essential. All missed classes will be noted. The policy on missed classes is to allow each student **three (3) absences**, no questions asked, no penalty. All further absences over this limit will reduce the student's course contribution grade and final course grade, no questions asked, no excuses of any kind accepted. **Students with an excessive number of absences are at risk of failing the course.** Only official university engagements, such as officially scheduled USC Marshall sponsored case competitions and sports events, will be accepted as exceptions to this policy. Job interviews, etc., are not excused, so choose your absences carefully. Habitual lateness and leaving class early, for whatever reason, will be noted as evidence of low course commitment and penalized. ***You cannot learn from our class discussions, and your classmates cannot learn from you, if you are not present.***

8. **Relax.** You've worked hard to get here, so enjoy the learning experience that is unique to Marshall and USC. Put effort into your learning, take the class seriously, and do the work. If you achieve those objectives, then you should do well in the class. More importantly, the material that you learn in this class is valuable to your career and professional development.

9. **Hey Mische!** I want you to know that I take your commitment to USC, your degree and your professional and personal development very seriously. *I want you to succeed!* I want you to excel and just absolutely shred the class and the material. The results of my work are measured in years after you take the class. Please know that I am available to help you in any way that I can.
 - If you need career advice, or would like me to review your resume, or help prep you for an interview...*come see me!*
 - If need a recommendation and have done the work in the class...*come see me!*
 - If you are having problems with the material or grades...*come see me!*
 - If you are having issues with me, or my teaching style... *come see me!*
 - *My door is always open.* I've been around, been through it and I am here to help.
 - If I not available or around, or if you feel the need to discuss matters related to the course, your learning, or my teaching confidentially, then please feel free to contact either Professor Voigt (MOR), or Professor Fiss, Chair of the MOR Dept. We are team and we are here to teach and help you be successful.

7.0 COURSE NOTES & POSTINGS

Announcements, key dates, shared information, general feedback, commentary, lecture documents, notes, articles, supplemental course documents are posted on Blackboard (BB).

- It is your responsibility and *solely* your responsibility to frequently check Blackboard for updates and materials and to also check your email for communications from me.
- **WARNING!** Do not rely on BB or Power Points...the material and learning are in the live lectures! I rarely post PPTs and notes! Come to class and learn.

8.0 GRADING & PERFORMANCE ASSESSMENT

8.1 Grading Composition

Please be assured that I take grading very seriously and will work hard to grade you as thoroughly, fairly and as accurately as I possibly can.

I recognize that your work and grade are reflective of many factors. For this course, your grade will be based on a combination of **three** grading events: (1) Midterm, (2) Comprehensive Final, and (3) Project Team performance (presentation(s)). Your final grade will be reflective of your individual and team performance in the grading events ***and*** your relative ranking in terms of total grade points earned/scored in those events as compared to the other students. Thus, your final grade is a reflection of your work and where you work ranks in comparison to other students, and the grade splits (A to A- to B+ to B, etc.) from highest to lowest established for your class. Grading for exams and papers is done by USC Student ID only.

Your final grade is not based on a mandated GPA curve or target, but on your individual performance, the performance of the class as a whole, and your relative ranking as compared to the other students. Historically, the average grade for this class is about a “B+.”

Below is the grading composition for this class.

MOR 554 - GRADING EVENT & COMPOSITION	
<u>Grade Event</u>	<u>Weighting/Composition</u>
1. Mid-Term Exam	35% (Individual based grade)
2. Back Bay Simulation	25% (Team based grade)
3. Final Exam -Comprehensive	40% (Individual based grade)
Total:	<u>100%</u>

(Please note that I reserve the right to change the composition and/or weightings based on class performance ***and*** subject to our collective agreement and vote.)

As this is a professional competency course, grading will be competitive and rigorous. Not everyone will get an “A” and effort, although appreciated and encouraged, may not always be indicative of the final grade and or your effort. Do your best! Compete hard and fairly for the best grade that you can possibly earn. Don’t worry about the other students...concentrate on your own learning and contributions to the class.

8.2 General Grading Standards & Criteria

8.2.1 General

Do the work! You are here to learn and gain the necessary knowledge and skills to be successful in business...do the work to get better! Marshall degree candidates are expected to perform at the highest levels. I take grading and your grade seriously! Your work will be evaluated based on the objectives of MOR 554 and the criteria described herein. As a general guideline, when assessing and grading your work and contributions, I use a number of criteria and dimensions. As a guideline, below please see some examples including, but not limited to:

1. **Causality** – Have you demonstrated a correlation between the data, analysis and conclusion/comments?
2. **Perspective** – Did you establish a context & did you provide perspective for your finding, thought or conclusion...does that context reflect contemplative thinking and does it ‘paint a picture’ (going above & beyond the obvious correct answer)?
3. **Application** – Have you applied the appropriate course materials and concepts correctly and have you demonstrated linkage to the course materials?
4. **Relevance** -- Does your work or comment bear on the subject at hand? (Comments that do not link up with what the discussion is focusing on can actually detract from the learning experience.)
5. **Associative Thinking/Linkage** – To what extent are your work and comments logical antecedents or consequences of a particular argument traced out? To what extent are you successfully linking other concepts, readings, events, and precedent and reflect the “*Medici Effect*” in your thinking.
6. **Responsiveness** – To what extent does your work or comment react in an important way to what someone else has said, the issue or problem at hand, or scope and objectives of the assignment or project?
7. **Analysis** – Have you employed the proper set of frameworks and analytical methods?
8. **Evidence** - Have you effectively used data from the case, from personal experience, from citable third-parties, from general knowledge to support the assertions made and or conclusions?
9. **Importance** - Does your work or comment contribute further to our understanding of the issues at hand? Is a connection made with other cases we have analyzed?
10. **Critical Thinking** – Are you thinking critically? Are you interrogating issues and facts? Does your thinking reflect the attributes of USC’s 5-step USC-CT? Have you applied and demonstrated USC-CT in your analysis and formulations? (See posting on BB).
11. **Engaged** – Did you come to class ON TIME and did you CONTRIBUTE?
12. **Compliance** – Is your work responsive to the requirements and scope and objectives of the assignment?

I will do its best to make my expectations for the various assignments clear and to evaluate them as fairly and objectively as they can. Also, I usually publish grading criteria and expectations for exams, presentations and reports ahead of time to help you better prepare.

If you feel that an error has occurred in the grading of any assignment, you may, within one week of the date the assignment is returned to you, write a memo to me and request an explanation and re-evaluation of the assignment. Attach the original assignment to the memo and explain fully and carefully why you think the assignment should be re-graded. Be advised that as in business and life, the re-evaluation process can result in three types of grade adjustments: positive, none, or negative.

8.2.2 Team/Peer Evaluations

Each of you will have the opportunity to complete a peer evaluation of the members of your team with respect to the team final project. A copy of the peer evaluation form will be posted on BB. Please note:

- If you are experiencing any group-related problem (e.g. conflict, free-rider, known-it-all, confrontational or demeaning behavior, etc.), please let me know immediately. Do not wait until the end of the semester. If you report this problem too late, there is not much I can do.
- If you experiencing any academic problems or personal issues (e.g. illness, injury, hardships, conflicts, etc.) that might influence your academic performance, please let me know immediately. Do not wait until the end of the semester. If you report this problem too late, there is not much I can do.

8.2.3 Examination Design & Procedures

I view exams as positive experiences for both the student and professor. My exams are designed to allow you to express and demonstrate your mastery of the subject material. As with all of my exams, each exam is crafted by me, is intended to be pragmatic, and is designed to test the most important subject concepts and topics. The exams are intended to allow to showcase your knowledge, and provide you with the opportunity to demonstrate how you use, adapt, and apply important course concepts and topics to a series of questions, situations, and management decisions and choices. Generally, my exams are organized into three, or four sections:

- (1) Course Concepts & Theory,
- (2) Cases & Readings,
- (3) Applied Reasoning & Critical Thinking,
- (4) Essay or Short Answer.

Important! I do not grade by name. You are to use only the last four digits of your USC ID on your exam paper. This helps maintain the confidentiality and privacy of each student.

8.2.4 Final Examination: A Summation of Your Learning Experience

There will be a final exam for this class. The final examination for this course will be conducted on the date, at the time and in the location **as scheduled** by USC. I do not schedule final exams. No exceptions shall be granted unless previously approved, in writing, by the appropriate USC academic unit. You are completely responsible for attending the final examination on the date published by USC...please do not ask me for any special consideration unless you specifically satisfy the conditions described below for: scheduling conflicts, religious observance conflicts and documented emergencies. The following is USC's stated policy for final examinations.

“All undergraduate and graduate courses scheduled in the standard sessions of the fall and spring semesters have a published final examination schedule. In accordance with the policies of the United States Department of Education, the last scheduled day of class is required instructional time. Either a final examination or other final summative experience must take place during the published final examination period.”

Final examinations or other final summative experiences may not be scheduled during the Study Days period.

No deviations from the published examination period are permitted for courses scheduled in

a standard session during the fall and spring semesters, unless faculty have authorization in advance from the Committee on Academic Policies and Procedures (CAPP). CAPP will not consider any faculty request for rescheduling a final examination without unanimous written consent of all students in the class. Contact the Registrar's Office (213-740-4623 or registrar@usc.edu) for the request form and procedures.

USC's final exam schedule and policy can be viewed at:

<http://classes.usc.edu/term-20173/finals/>

8.2.5 Student Scheduling Conflicts

No student is permitted to omit or anticipate a final examination and no instructor is authorized to permit a student to do so.

Students should plan in advance to avoid scheduling conflicts in their final examinations. If a student is scheduled for two final examinations at the same time, the student should request to take one of the examinations on a different day or time. If a student is scheduled for more than two final examinations in one day, the student may request to take one of the exams on a different day or time. In either situation, the student must contact the professors involved no later than two weeks prior to the scheduled examination date and request an accommodation. If an accommodation cannot be arranged, the student should contact the USC Testing Services (213-740-7166 or testing@usc.edu) for assistance.

Faculty are reminded that grades are due 96 hours after the University-scheduled final examination day and time. Therefore, it might not be possible to accommodate late student requests for an alternate, makeup final examination after the published examination period.

8.2.6 Religious Observance Conflicts

When a final examination is scheduled at a time that conflicts with a student's observance of a holy day, faculty members should accommodate a request for an alternate examination date and time. A student must discuss a final examination conflict with the professor no later than two weeks prior to the scheduled examination date to arrange an acceptable alternate examination date and time. The student and/or professor may reach out to the Office of Religious Life (213-740-6110 or vasoni@usc.edu, Dean of Religious Life) for guidance.

8.2.7 Documented Emergency

In the case of a documented emergency that occurs after the withdrawal date and/or during the final exam period, students should consult the professor about receiving a grade of Incomplete (IN) for the semester. Faculty and students alike should refer to the rules regarding the mark of Incomplete at the time of the request. The **Registrar's recommended definition of emergency:** "An unforeseeable situation or event beyond the student's control that prevents her from taking the final examination or final summative experience." Based on this definition, a student may not request an "IN" before the withdrawal deadline. The rationale is that the student has the option to drop the course until the withdrawal date. The grade of IN exists so there is a remedy for illness or emergency which occurs after the deadline to withdraw.

9.0 ELC- SIMULATION

9.1 Description

One of the major activities associated with the learning objectives in MOR 554 is understanding the complexities of leading innovation. Leading innovation involves making decisions as to what innovations to invest in, when to invest, and how much to invest. To provide you with the opportunity to experience these MOR 554 uses an HBSP case called, “Back Bay Battery” (B3).

This assignment is designed to link course concepts to a contemporary business that is experiencing distress, duress, or failure or has/currently is going through a transformation. It is highly integrative and provides you with significant MBA/Executive latitude in applying course concepts and those concepts from other classes to a real-life company, while providing the structure necessary for effective learning through the application of MOR 554 course material and objectives.

9.2 Design

The assignment is composed of the following **three components**:

1. **Teams.** Organize yourselves into teams of 5-7 students. Choose your teams wisely because this will be learning team for the entire semester and you and your teammates will be sharing grades for this part of the assignment.
 - a. Please give your team a name...like “Trojans” or something like that. Naming the team aids in branding you and your team.
 - b. Please provide me with a list of all team members.
 - c. Please elect or select a team leader who I can coordinate with.
2. **Game.** Students play B3 individually and collectively as a team. Experience indicates that the more you play the game, the more you learn and hence the higher the score.
3. **Summary Report.** At the completion of the semester teams present their results as described in 9.6 below.

9.3 Educational Objective

The objective of this simulation is to place you, the MBA, in a position of authority with responsibility for making investment and resource decisions related to existing and emerging battery technologies. By engaging in this simulation you’ll get a very good idea of what it is like to make decisions regarding innovation, and what the consequences of those decisions will be.

The simulation is challenging, complex and demanding. As in real business, good decisions are recognized with earnings improvements, poor result in losses. In this simulation, you will be able to formulate strategies and actions based on course concepts and apply those to the “game.”

The simulation, Back Bay Battery (B3) is part of your coursepack for MOR 554 available from HBSP.

9.4 Your Objectives and Mission

1. The central challenge is to how to best balance investment in current business needs as opposed to future business needs.
2. This challenge creates for interesting dynamics that confront most companies:
 - a. How to optimize limited resources for maximum short term cash flows while planning for the future?

- b. Understanding which technology will become the de-facto technology of the future and why?
3. The game is “won” on best and highest and earnings, thus your objective is to generate the highest and best earnings.
4. Additional information is provided in the Back Bay Battery case documents, and in Section 4.0 below.

9.5 PLAYING THE GAME: MANAGERIAL CONSIDERATIONS

You might consider exploring a number of managerial questions:

1. Who are the current customers? Will these same customers be your future customers?
2. Does over engineering lead to overshooting?
3. Does over engineering lead to more customers and greater market share and presence?
4. How do you manage a declining (aging) NiMH product to maximum potential while investing in products?
5. Which new products present the greatest threat and consequently, opportunity, to be the most disruptive?
6. From a cash flow perspective, when is the best time to invest in new and potentially disruptive technologies and products?
7. How do “economies of scale” impact or influence your R&D investment decisions?
8. How does the timing horizon, that is, the “adaptation period” for new and potentially disruptive products/technologies (ultra-capacitors) influence company R&D strategies and investments?
9. How does product life cycle planning impact your strategies and decision making?
10. What are the most important data and data points?

9.6 Summary Report of Results & Learning

It is essential that you “play the game” at least 10 times. Experience indicates that the more that a student plays B3, the more learning is accomplished and the higher the scores. Don’t worry about your scores...just play the game and get better at it.

At the end of the semester, your team will prepare and present the following:

1. What’s Required? A simple 1 to 2-page memo to me, summarized as per these instructions.
2. In What Form? Printed, stapled, and handed-in at the beginning of class.
3. When’s It Due? TBD
4. What’s Required? There are 5 requirements as per the format below.
5. What’s the Format? See below.

Section 1.0: Your Score. This is the ONE Best and Highest Score for your team. Only one score is permitted & when presenting the score be sure to tell me under whose name the score was recorded so I can go in and verify it when grading.

Section 2.0: Your Team Members. Please make sure that you provide me with the complete list of all team members in Last, First Name format.

Section 3.0: **Top 3-5 “Actions”** that Your Team Took to Earn Your Score. Please summarize the top (most effective) managerial actions that you made to help generate the score that you earned and presented in Section 1.0.

Section 4.0: **Top 3-5 “Things” You Learned** from the Simulation. Please summarize the top 3-5 things that you learned from playing the simulation.

Section 5.0: **Team Effectiveness.** Please comment on your team’s effectiveness and individual levels of contribution.

9.6 ADDITIONAL INFORMATION FOR B3

“The term “energy storage” applies to many different technologies (Figure 4), including: batteries, flywheels, thermal storage, and pumped hydroelectric storage. All technologies can store energy during periods when the cost is low and then make the energy available during periods when the costs are higher.”¹

For our purposes, we are concentrating on Electrical Energy Systems (EES) technologies.

- “EES technology refers to the process of converting energy from one form (mainly electrical energy) to a storable form and reserving it in various mediums; then the stored energy can be converted back into electrical energy when needed.”²
- EES generally refers to electrochemical storage systems or batteries.

“EES can have multiple attractive value propositions (functions) to power network operation and load balancing, such as:

- helping in meeting peak electrical load demands,
- providing time varying energy management,
- alleviating the intermittence of renewable source power generation,
- improving power quality/reliability,
- meeting remote and vehicle load needs,
- supporting the realization of smart grids,
- helping with the management of distributed/standby power generation,
- reducing electrical energy import during peak demand periods.”³

“According to the U.S. Department of Energy (DOE), there are already more than 500 MW of advanced energy storage in operation in the U.S. In 2015 alone, there were 221 MW of new deployments of advanced energy storage in the U.S., an increase of 243% over the installations in the U.S. for the year 2014.

- It is expected that annual deployments of advanced energy storage will exceed 1 GW per year by 2019 and be at nearly 2 GW per year by 2020.
- It is expected that there will be nearly 4,500 MW of advanced storage technologies operating on the U.S. grid by 2020.

¹ Commonwealth of Massachusetts, “State of Charge” 2016.

² See, Luo, Wang, Dooner & Clarke’s Research

³ Ibid.

- Overall, the U.S. Market for advanced energy storage technologies is expected to grow by 500% in five years.

Prices for advanced storage technologies have decreased significantly in recent years. According to IHS, a leading business data provider, average lithium-ion battery prices decreased in cost over 50% between 2012 and 2015, and are expected to decrease over 50% again before 2019.”⁴

Battery Industry

The industry is organized around two factors: (1) Technology offerings, and (2) Capacity.

- Overall industry size is around \$60 billion in U.S.
- Industry has 20 major manufacturers/competitors.
- Highly fragmented, low concentration.
- Manufacturers tend to focus on narrow product offerings.

Storage Technologies

Battery technology has been around since 1857.

- The basic physics of batteries technologies have changed little in that they are designed to serve three purposes: (1) Capture energy, (2) Store energy, and (3) Deliver energy. However, battery technology has changed considerably.
- Most storage systems are a variation of a central, fundamental technology.
- There are 11 fundamental technologies:
 1. Carbon zinc
 2. Alkaline
 3. Lead acid
 4. Sodium Sulfur (NaS)
 5. Nickel cadmium (NiCad)
 6. Nickel iron (NiFe)
 7. Nickel hydride (NiMh)
 8. Lithium Ion (Li-ion)
 9. Lithium Polymer
 - a. Electrolyte
 - b. Solid polymer
 10. Ultra capacitor
 11. Flow Battery Systems (FBS)
- Because of technology capital and R&D costs, and scaling costs, manufacturers specialize in a technology.
- Lithium ion is most popular storage at this time. However, it is important to note that each type of technology has found application in a wide variety of settings such as:
 - Storage of hydrogenated power
 - Storage of wind generated power
 - Storage of solar photo-generated power
- Ultra capacitor is gaining credibility and may be a future technology, along with the FBS technology. However, both are unproven at this time with respect to durability and density for home use.

Performance Variables

⁴ OpCit.
 MOR 554 Course Syllabus: FALL- 2017
 Professor Michael A. Mische- HOH 415

Battery performance is influenced by four basic factors:

- Temperature (extreme heat and cold reduce battery efficiency and longevity)
- Application (how and where used influences life and performance)
- Physical stress (shock, vibration, abuse affects longevity)
- Cycle Times

Battery Performance & Measurements

Battery storage performance is measured in six dimensions:

1. Energy density
2. Recharge cycles
3. Self-discharge to 50%
4. Recharge time
5. Price
6. Durability in application

Major Application in the U.S.

LA considering deploying 18,000 lithium ion packs by 2025.

Application to KSA

- Unknown at this time. Variables such as demand, peak demand, carbon emissions, etc., are unknown.
- Recommend using the Alveo Analytics Advanced Storage Optimization Model to determine need, practicality, and storage technology.

10.0 ASSIGNMENTS

10.1 General

The assignments for this class may involve a combination of readings, cases, videos, ELC exercises, simulations and a team project.

- **For readings and cases:** please see **Section 3.0, “Course Calendar”** for a description of class session topics, reading assignments and other information (Excel spreadsheet).
- **Team Performance:** Please organize yourselves into teams of 5- 7 students. This will be your “learning team” for the entire semester, so select wisely and carefully. The team performance component is **25%** of your final grade and will include peer reviews. You may regard your team performance and each of your submissions as an “exam” in which you apply what you’ve learned according to the assignment.

10.1 Assignment Submission Policy

Be professional. Assignments must be turned in on the due date/time. Specifically:

- All formal assignments are due as specified and must be submitted in **HARD COPY** form ONLY. Due to the number of students, I cannot accept electronic copies unless prior approved (way too much downloading and printing, so help me out!).
- For all assignments please make sure that you specify your course number and DAY and TIME of course...that’s really helpful to me!
- Any assignment turned in late *may* be subject to an automatic grade deduction (for example, if your work is a B+ grade, you will be given a C+ grade).

- If you are unable to attend class on that day, make arrangements for your assignment to be delivered to the classroom or to my mailbox in the MOR Dept. at **400 Hoffman Hall** by the start of class. You may also slide your work under my door at **415 Hoffman Hall** or fax your work to me at 213.740.3582 (To Professor Mische). Late or not, you must complete all required assignments or your grade will suffer.

11.0 ADDITIONAL INFORMATION

11.1 Retention of Graded Coursework

Final exams and all other graded work, which affected the course grade, will be retained for one year after the end of the course *if* the graded work has not been returned to the student (i.e., if I returned a graded paper to you, it is your responsibility to retain it).

11.2 Technology Policy and In-class Use of Laptops and Other Devices

Laptops, cell phones, and iPads are **not** to be used during lectures.

11.3 Internet, Cell Phones, Tablets, Etc.

Internet usage is not permitted during academic or professional sessions unless otherwise stated. Use of other personal communication devices, such as cell phones, is considered unprofessional and is not permitted during academic or professional sessions. ANY e-devices (cell phones, PDAs, I-Phones, Blackberries, other texting devices, laptops, I-pods) must be completely turned off during class time.

- If you are texting I will politely ask you to stop; thereafter I will ask you to leave.
- During all quizzes, tests, and examinations, you must place your devices away and out of sight and in the ‘off’ mode. During the exam, any use of cell phones or other device without my express consent is subject to dismissal from the exam.
- Videotaping my lectures is not permitted due to copyright infringement regulations.
- Audiotaping my lectures is not permitted unless prior approved by me. Use of any recorded or distributed material is reserved exclusively for the USC students registered in this class.
- No student may record, tape, transmit, or video any lecture, class discussion, or meeting with me without my prior express written permission. The word “record” or the act of recording includes, but is not limited to, any and all means by which sound or visual images can be stored, duplicated or retransmitted whether by an electro-mechanical, analog, digital, wire, electronic or other device or any other means of signal encoding.
- I reserve all rights, including copyright, to my course syllabi, lectures, Power Points, exams, answer keys, and all supplementary course materials available to the students enrolled in my class whether posted on Blackboard or otherwise. They may not be reproduced, distributed, copied, or disseminated in any media or in any form, including but not limited to all course note-sharing websites.

11.4 Statement for Students with Disabilities

Any student requesting academic accommodations based on a disability is required to register with Disability Services and Programs (DSP) each semester. A letter of verification for approved

accommodations can be obtained from DSP. Please be sure the letter is delivered to me (or to your TA) as early in the semester as possible. DSP is located in STU 301 and is open 8:30 a.m.–5:00 p.m., Monday through Friday. The phone number for DSP is (213) 740-0776. For more information visit www.usc.edu/disability.

11.5 Statement on Academic Integrity

USC seeks to maintain an optimal learning environment and the highest academic standards. **I will not tolerate cheating of any kind.** Any cheating will result in the automatic dismissal from my class and a referral to USC's the Office of Student Judicial Affairs and Community Standards for immediate consideration. Any allegation of cheating will be referred to the USC's the Office of Student Judicial Affairs and Community Standards.

General principles of academic honesty include the concept of respect for the intellectual property of others, the expectation that individual work will be submitted unless otherwise allowed by an instructor, and the obligations both to protect one's own academic work from misuse by others as well as to avoid using another's work as one's own. All students are expected to understand and abide by these principles. *SCampus*, the Student Guidebook, (www.usc.edu/scampus or <http://scampus.usc.edu>) contains the University Student Conduct Code (see University Governance, Section 11.00), while the recommended sanctions are located in Appendix A of that document.

Students will be referred to the Office of Student Judicial Affairs and Community Standards for further review, should there be any suspicion of academic dishonesty. The Review process can be found at: <http://www.usc.edu/student-affairs/SJACS/>.

Failure to adhere to the academic conduct standards set forth by these guidelines and our programs will not be tolerated by the USC Marshall community and can lead to dismissal.

11.6 Emergency Preparedness/Course Continuity

In case of a declared emergency if travel to campus is not feasible, USC executive leadership will announce an electronic way for instructors to teach students in their residence halls or homes using a combination of Blackboard (BB), teleconferencing, and other technologies. Please activate your course in Blackboard with access to the course syllabus. Whether or not you use Blackboard regularly, these preparations will be crucial in an emergency. USC's Blackboard learning management system and support information is available at blackboard.usc.edu.

11.7 Statement on Academic Conduct and Support Systems

11.7.1 Academic Conduct

Plagiarism – presenting someone else's ideas as your own, either verbatim or recast in your own words – is a serious academic offense with serious consequences. Please familiarize yourself with the discussion of plagiarism in *SCampus* in Section 11, *Behavior Violating University Standards* <https://scampus.usc.edu/1100-behavior-violating-university-standards-and-appropriate-sanctions>. Other forms of academic dishonesty are equally unacceptable. See additional information in *SCampus* and university policies on scientific misconduct, <http://policy.usc.edu/scientific-misconduct>.

11.7.2 Discrimination, sexual assault, and harassment are not tolerated by USC

Any form of discrimination, harassment, profiling, bullying, etc. will not be tolerated by me, or any other member of the USC community. You are encouraged to report any incidents to the *Office of Equity and Diversity* <http://equity.usc.edu> or to the *Department of Public Safety* <http://capsnet.usc.edu/department/department-public-safety/online-forms/contact-us>.

This is important for the safety of the whole USC community. Another member of the university community – such as a friend, classmate, advisor, or faculty member – can help initiate the report, or can initiate the report on behalf of another person. *The Center for Women and Men* <http://www.usc.edu/student-affairs/cwm/> provides 24/7 confidential support, and the sexual assault resource center webpage <http://sarc.usc.edu> describes reporting options and other resources.

11.7.3 Support Systems

Students whose primary language is not English should check with the American Language Institute <http://dornsife.usc.edu/ali>, which sponsors courses and workshops specifically for international graduate students. The Office of Disability Services and Programs www.usc.edu/disability provides certification for students with disabilities and helps arrange the relevant accommodations. If an officially declared emergency makes travel to campus infeasible, USC Emergency Information <http://emergency.usc.edu> will provide safety and other updates, including ways in which instruction will be continued by means of blackboard, teleconferencing, and other technology.

11.7.4 Disruptive Classroom Behavior

I will not tolerate disruptive or abusive behavior in my classroom. Fortunately, I have never had any instance of disruptive or abusive behavior. Disruptive classroom behavior can take many forms. It can involve a student talking constantly while the professor is delivering a lecture or a student who loudly and regularly interrupts the flow of class with questions or interjections. Such behavior is unacceptable to the University and will not be tolerated because it interferes with the learning process for other students and hinders the professor's ability to teach effectively. Further information can be found at http://www.usc.edu/student-affairs/SJACS/pages/faculty/disruptive_behavior.html

12.0 COURSE CALENDAR & ASSIGNMENTS BY CLASS SESSION

MOR 554 COURSE CALENDAR, TOPICS, ASSIGNMENTS & READINGS ARE POSTED SEPARATELY AS AN EXCEL FILE ON BLACKBOARD UNDER:

"SYLLABUS > WEEKLY READINGS"

THANK YOU!

FIGHT ON!