



## 1. Overview

### A. Provide a brief description of the new certificate.

The world is a risky place -- all firms are exposed to a variety of factors that can create considerable volatility in financial performance, or worse, severe financial distress. Risk comes in many forms, including market risk (e.g., volatility of market prices; interest rate volatility), operational risk (e.g., product flow disruptions; failure of people, processes or systems), policy risk (e.g., changes in trade policies; legislation), credit risk (e.g., customer or counterparties fail to meet obligations), and sovereign risk (e.g., risks of doing business in a certain country), among other classifications. Given the pervasive and unavoidable nature of risk, the ability to identify, measure, and manage risk is a key strategic function. Responding to risk in strategic ways throughout the organization creates value in ways that students need to understand.

Historically, the prevailing view was that risk really didn't matter given it could be diversified away by investors holding well diversified portfolios of assets. More recently, active risk management has been touted as a way to reduce variability of cash flows and ultimately increase firm value. While the development of risk management strategy is often considered a C-suite function, with responsibility ultimately falling upon the CEO, the emphasis on enterprise risk has spawned new executive positions such as the CRO (Chief Risk Officer). In some organizations, the responsibility for risk management is shared among various departments or functional units. Therefore, it is critical that management at all levels understand how various risks impact their specific functional area, and ultimately the enterprise as a whole. Indeed, modern risk management transcends traditional topics of insurance and financial risk management, encompassing a range of risks and strategies for measuring and managing such risks. Understanding risk begins with identifying and measuring it at its source, and considering its impact on financial outcomes. Consequently, risk management has evolved into a sophisticated science, leveraging all the modern tools of big data analysis, forecasting, and simulation. While firms' response to risk has historically been guided by intuition and rules of thumb designed for protection, students with a rigorous understanding of the methods of risk management as a science will be able to create value for their organizations, and create competitive advantages as a result.

This certificate is designed to give undergraduate business students (as well as non-business students who possess the proper prerequisites) a solid foundation in the theory and practice of modern risk management. Upon completion of the certificate, students will be able to identify and measure a variety of business and financial risks, and to design and articulate strategies for managing and communicating risks. The concept of Enterprise Risk Management (ERM) is emphasized at the onset of the certificate curriculum. ERM emphasizes that risks and risk management strategies must be considered holistically at the firm level, not in isolation.

The proposed curriculum of the certificate builds on a foundation of key financial management principles (FIN 300) followed with a general course in risk management and insurance principles (BUS 434). Existing courses which incorporate elements of risk modeling, risk transfer strategies (e.g., derivatives), and the communication of risk are also considered in the palette of courses. A new, integrative, case-based course focusing on the strategic role that risk management plays in business organizations, emphasizing the tenets of Enterprise Risk Management (ERM), completes the certificate.

### B. This proposed certificate (check one):

- Is cross disciplinary; or
- Is certified by a professional or accredited organization/governmental agency; or,
- Clearly leads to advanced specialization in a field; or,
- Is granted to a program that does not currently have a major.

### C. Why should this be a certificate rather than a concentration or a minor?

A certificate allows students already majoring in business (BA or BS), or non-business majors maintaining the proper prerequisites, the ability to leverage their business training through additional coursework designed to better understand the nature of risk management. Indeed, a thorough understanding of modern risk management principles can complement and add value to any major. A certificate also provides flexibility to students wishing to pair multiple certificates in instances where common courses may overlap in order to further enhance and customize their educational portfolio.

**D. Affiliation**

If the certificate program is affiliated with a degree program, include a brief statement of how it will complement the program. If it is not affiliated with a degree program, incorporate a statement as to how it will provide an opportunity for a student to gain knowledge or skills not already available at ASU.

This proposed certificate is not affiliated with a particular degree program. Because risk management is a topic that is ubiquitous in business, a certificate focusing on understanding core concepts of risk measurement, management, and communication is ideal as it allows students to further explore this important yet sometimes overlooked topic. Thus the suite of courses offered through this certificate will provide students further, focused insight into the topic. While there are other programs at ASU that teach important topics of interest to the risk management field (e.g., industrial engineering, actuarial sciences) this certificate would particularly provide students interested in business with an understanding of key risk measurement and management concepts that would complement any functional area of business and generally increase their overall business acumen.

**E. Demand**

Explain the need for the new certificate (e.g., market demand, interdisciplinary considerations).

The need for the certificate is largely derived from the need for business students to better understand the complexities of risk identification, risk measurement, and risk management techniques in a business environment that is inherently, and increasingly, exposed to more uncertainty. First, the function of risk management within many firms is more and more falling upon a Chief Risk Officer (CRO), or assigned to individuals throughout the firm at various levels of the enterprise. Risk management, while defined differently for firms in different industries, is a growing need among all firms and is becoming an important and evolving functional area of business. Students that are well trained in risk management concepts will have a competitive advantage, regardless of the industry. Second, traditional employers with a focus on risk management training, such as insurance companies, banks, financial services organization, companies that procure or sell commodity products, import/export firms, etc., will also likely find value in the certificate as a complement to any business degree. Third, many top ranked business schools currently offer some sort of curriculum with a focus or concentration in “enterprise risk management” or “risk management and insurance”. However, programs focused on general risk management principles or ERM concepts are typically found at the graduate level (e.g., Columbia University’s M.S. Concentration in Enterprise Risk Management; New York University’s Graduate Certificate in Risk Management). Traditional “risk management and insurance” programs are usually focused at an undergraduate level, and generally are designed to specifically train insurance industry professionals. Therefore, an undergraduate certificate in risk management offered by the W. P. Carey School of Business would be unique in the marketplace.

**F. Projected enrollment**

What are enrollment projections for the first three years?

	<b>1<sup>st</sup> Year</b>	<b>2<sup>nd</sup> Year</b> (Yr. 1 continuing + new entering)	<b>3<sup>rd</sup> Year</b> (Yr. 1 & 2 continuing + new entering)
Number of Students (Headcount)	30	60	90

## 2. Support and Impact

### A. Faculty governance

Provide a supporting letter from the chair of the academic unit verifying that the proposed certificate has received faculty approval through appropriate governance procedures in the unit and that the unit has the resources to support the certificate as presented in the proposal, without impacting core program resources.

See attached letter from Mark Manfredo, Director and Associate Dean

### B. Other related programs

Identify other related ASU programs and outline how the new certificate will complement these existing ASU programs. (If applicable, statements of support from potentially-affected academic unit administrators need to be included with this proposal submission.)

This program is not anticipated to impact programs outside of the W. P. Carey School of Business. Where applicable, appropriate courses outside of the W. P. Carey School of Business are included in the suggested courses. See letters of support in section 2.C below.

### C. Letter(s) of support

Provide a supporting letter from each college/school dean from which individual courses are taken.

See attached statements of support from Duane Roen (Dean – College of Integrative Arts and Sciences and Vice Provost of ASU Polytechnic); Rong Pan (IE Program Chair, Fulton Schools of Engineering); Tom Bates (Chair, WPC Finance); and Dale Rogers (Interim Chair – WPC Supply Chain Management)

### 3. Academic Curriculum and Requirements

#### A. Knowledge, competencies, and skills

List the knowledge, competencies, and skills (learning outcomes) students should have when they complete this proposed certificate. Examples of program learning outcomes can be found at (<http://www.asu.edu/oue/assessment.html>).

Today's risk management practitioner requires a portfolio of skills including solid critical thinking and communication skills coupled with discipline-specific knowledge of risk management practices applicable to all businesses. Thus the knowledge, competencies, and skills (learning outcomes) of the Risk Management certificate include:

- Critical Thinking:
  - Draws conclusions consistent with facts and analysis.
  - Identifies information relative to problem.
- Communication:
  - Provides an appropriate, clear, and logical organizing structure.
  - Uses acceptable style and grammar.
  - Demonstrates knowledge of discipline specific concepts.
- Discipline-Specific Knowledge:
  - Identify and classify risks exposures of various businesses (e.g., market risk; credit risk; operational risk) as well as existing and new techniques for managing such risks (e.g., derivatives, insurance products, diversification, and self-insurance).
  - Measure and model various risk exposures.
  - Describe and apply the tenets of enterprise risk management (ERM) and evaluate the use and efficacy of ERM practices and other risk management techniques employed by different firms and industries.

#### B. Describe the plan and methods to assess whether students have achieved the knowledge, competencies and skills identified in the Learning Outcomes. (You can find examples of assessment methods at <https://uoeee.asu.edu/assessment>.)

Students pursuing the Risk Management certificate will develop knowledge, competency, and skill in the three areas noted above: critical thinking, communication, and discipline-specific knowledge. To ensure that students are achieving these learning outcomes described in (A) above, an assessment will be performed yearly using direct and indirect measures as described below:

- Direct measure: discipline-specific knowledge, critical thinking, and communication will be measured directly from an applied case study problem administered in BUS 436 – Frontiers in Risk Management. This course is designed largely as a case-based course, thus facilitates the development of communication and critical thinking skills in addition to discipline specific knowledge. The case will be graded using a rubric aligned with the learning outcomes developed in (A). All students in the course will be sampled, with students pursuing the certificate asked to self-identify for the purposes of assessment. BUS 436 is a required course for the certificate, with BUS 434 – Risk Management and Insurance serving as a pre- or co-requisite. Thus, the format of the course (case based) and the likely timing of the course in the program sequence makes it an appropriate course to sample for assessment.
- Indirect measure: students pursuing the certificate will also complete a survey in BUS 436 in order to garner additional information regarding achievement of learning outcomes. Survey questions will be designed to assess how they perceive their achievement of the established discipline-specific knowledge, critical thinking, and communication outcomes.

#### C. Admissions criteria

List the admissions criteria for the proposed certificate. If they are identical to the admission criteria for the existing major and degree program under which this certificate will be established, please note that here.

ASU undergraduate admissions requirements (university minimum undergraduate admission requirements)

**D. Curricular structure**

Provide the curricular structure for this certificate. Be specific in listing required courses and specify the total minimum number of hours required for the certificate.

**Required certificate courses**

Prefix	Number	Title	Is this a new Course?	Credit Hours
BUS	434	Risk Management and Insurance	No	3
BUS	436	Frontiers in Risk Management	Yes	<u>3</u>
FIN	300	Fundamentals of Finance, <u>OR</u>	No	3
FIN	303	Honors Finance	No	3

*Section sub-total:* 9

**Elective certificate courses**

AGB	360	Agribusiness Statistics	No	3
AGB	435	Commodity Futures and Options Markets	No	3
BUS	384	Business Operations and Planning, <u>or</u>	No	3
SCM	432	Planning and Control Systems for Supply Chain Management	No	3
COM	414	Crisis Communication	No	3
FIN	421	Security Analysis and Portfolio Management	No	3
FIN	427	Derivative Financial Securities	No	3
IEE	454	Risk Management	No	3
OGL	421	Project Risk Management	No	<u>3</u>
SCM	314	Analytics for Logistics, <u>or</u>	No	3
SCM	315	Business Decision Models	No	3

*Section sub-total:* 9

**Other certificate requirements**

**E.g.** – Capstone experience, internship, clinical requirements, field studies, foreign language skills as applicable    Credit Hours  
 NA

Section sub-total:

**Total minimum credit hours required for certificate      18**

- E. Minimum residency requirement  
How many hours of the certificate must be ASU credit?  
18
- F. New Courses  
Provide a brief course description for each new course.

BUS 436 – Frontiers in Risk Management: This course highlights practices and challenges faced by firms in terms of identifying, measuring, and communicating a variety of business and financial risks, as well as designing and implementing risk management strategies as a critical component of the overall strategic management process. Emphasis is placed on considering a variety of financial and non-financial risks in a holistic framework. The primary course objective is for students to develop an understanding of the risk management practices and challenges faced by firms in a variety of business settings and industries. Upon completion of the course, students should be able to: a) assess complex risk management scenarios faced by real firms, b) engage the Enterprise Risk Management (ERM) paradigm in developing sound risk management practices that can be communicated across the firm, c) apply risk management taxonomy in describing various risks (e.g., market risk, operational risk, policy risk, weather risk, etc.), d) discuss the appropriateness of various risk management tools and strategies including insurance, derivatives, self-insurance, diversification, among others, and e) enhance critical thinking and communication skills (oral and written) through case study analysis.

Note: All new required courses should be submitted in Curriculum Changemaker and ready for Provost's Office approval before this certificate is put on Curriculum and Academic Programs Committee (CAPC) agenda.

**4. Administration and Resources**

**A. Administration**

How will the proposed certificate be administered (including admissions, student advisement, retention, etc.)?

The proposed certificate will be administered through the Morrison School of Agribusiness in the W. P. Carey School of Business. Current advising and admissions resources from the W. P. Carey School of Business in Tempe and at the ASU Polytechnic Campus will be used as primary contacts.

**B. Resources**

What are the resource implications for the proposed certificate, including any projected budget needs? Will new books, library holdings, equipment, laboratory space and/or personnel be required now or in the future? If multiple units/programs will collaborate in offering this certificate please discuss the resource contribution of each participating program. Letters of support must be included from all academic units that will commit resources to this certificate.

No new resources will be required.

**C. Primary Faculty**

List the primary faculty participants regarding this proposed certificate. For interdisciplinary certificates, please include the relevant names of faculty members from across the University.

<b>Name</b>	<b>Title</b>	<b>Area(s) of Specialization as they relate to proposed certificate</b>
Mark Manfredo	Professor	Commodity Futures Markets; Commodity Risk Management; Agribusiness Risk Management
Ashok Mishra	Professor	Agribusiness Risk Management
Timothy Richards	Professor	Industrial Organization; Real Options; Risk Management in Food & Agribusiness; Empirical Modeling
David Schreindorfer	Assistant Professor	Asset Pricing; Macro Finance; Portfolio Choice
George Aragon	Associate Professor	Financial Institutions; Empirical Asset Pricing; Derivatives
John Fowler	Professor	Discrete Event Simulation; Modeling & Analysis; Operations Research

**5. Additional Materials**

- A. Complete and attach the Appendix document.
- B. Provide one or more model programs of study (if appropriate).
- C. Attach other information that will be useful to the review committees and the Office of the Provost.

## APPENDIX

### OPERATIONAL INFORMATION FOR UNDERGRADUATE CERTIFICATES

(This information is used to populate the Degree Search/catalog website.

Please consider the student audience in creating your text.)

A. **Proposed Certificate Name:**

Risk Management

B. **Marketing Text (50 words maximum)**

Businesses operate in an increasingly risky environment. Students pursuing this certificate will learn how to manage risks that often negatively impact the financial performance of the firm. Emphasis is placed on identifying, measuring, communicating and managing a variety of risks often encountered in the modern business environment.

C. **Description (150 words maximum)**

This certificate is designed to give students a solid foundation in the theory and practice of modern risk management. Upon completion of the certificate, students will be able to identify and measure a variety of business and financial risks, and to design and articulate strategies for managing and communicating risks. The concept of Enterprise Risk Management is emphasized at the onset of the certificate curriculum, emphasizing that risks and risk management strategies must be considered holistically at the firm level, not in isolation.

D. **Contact and Support Information**

Building Name, code and room number: ( <a href="#">Search ASU map</a> )	SANTN 230F
Program office telephone number: ( <i>i.e.</i> 480/965-2100)	480/727-1586
Program Email Address:	wpcarey.morrison@asu.edu
Program Website Address:	<a href="https://wpcarey.asu.edu/agribusiness-degrees">https://wpcarey.asu.edu/agribusiness-degrees</a>

E. **Program Requirements:** Provide applicable information regarding the program such as curricular restrictions or requirements, specific course lists, or academic retention requirements.

The certificate in risk management is available to business majors and non-business majors. This certificate requires 18 credit hours of courses. A “C” or better is required for all upper-division coursework.

Required courses (9 credit hours):

BUS 434 Risk Management and Insurance (3)  
BUS 436 Frontiers in Risk Management (3)  
FIN 300 Fundamentals of Finance (3) OR FIN 303 Honors Finance (3)

Elective Courses (9 credit hours – Select 3 from the following list):

AGB 360 Agribusiness Statistics (3)  
AGB 435 Commodity Futures and Options Markets (3)  
BUS 384 Business Operations and Planning (3) or SCM 432 Planning and Control Systems for Supply Chain Management (3)  
COM 414 Crisis Communication (3)  
FIN 421 Security Analysis and Portfolio Management (3)  
FIN 427 Derivative Financial Securities (3)  
IEE 454 Risk Management (3)  
OGL 421 Project Risk Management (3)  
SCM 314 Analytics for Logistics (3) or SCM 315 Business Decision Models (3)

Depending on a student's undergraduate program of study, prerequisite courses may be needed in order to complete the requirements of this certificate.

F. **Additional Admission Requirements** If applicable list any admission requirements (freshman and/or transfer) that are higher than and/or in addition to the university minimum undergraduate admission requirements.)

NA

A student pursuing an undergraduate certificate must be enrolled as a degree-seeking student at ASU. Undergraduate certificates are not awarded prior to the award of an undergraduate degree. A student already holding an undergraduate degree may pursue an undergraduate certificate as a nondegree-seeking graduate student.

G. **Delivery/Campus Information Delivery:** On Campus

*Note: Once students elect a campus or On-line option, students will not be able to move back and forth between the on-campus and the ASU Online options. Approval from the Office of the Provost and Philip Regier (Executive Vice Provost and Dean) is required to offer programs through ASU Online.*

H. **Campus/Locations:**

Indicate **all** locations where this program will be offered.

Downtown Phoenix     Polytechnic     Tempe     West    Other:

March 16, 2017

To Whom It May Concern:

The proposed certificate in Risk Management has received faculty approval through appropriate governance procedures of the Morrison School of Agribusiness, W. P. Carey School of Business. The proposal was approved by the Morrison School of Agribusiness' Undergraduate Committee, discussed at our December 2016 faculty meeting, and supported via an email vote.

The Morrison School of Agribusiness has the resources to support the BUS and AGB courses proposed for this certificate. Most of these are existing courses and BUS 434, BUS 384, and AGB 435 are taught on a routine basis (at least yearly) in support of existing degree and certificate programs. One new course is proposed (BUS 436 – Frontiers in Risk Management) to support the certificate in Risk Management, and the Morrison School will support the teaching of this course through the use of existing faculty or through the use of a faculty associate. Core programs of the Morrison School of Agribusiness will not be impacted by the servicing of this certificate.

Sincerely,



Mark R. Manfredo  
Professor and Director – Morrison School of Agribusiness  
Associate Dean – W. P. Carey School of Business at ASU Polytechnic

## Mark Manfredo

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**From:** Duane Roen  
**Sent:** Sunday, March 26, 2017 3:56 PM  
**To:** Mark Manfredo  
**Subject:** RE: Certificate In Risk Management

Mark,

CISA enthusiastically supports your proposal for a certificate in Risk Management.

We will also offer COM 414 and OGL 421 as a concrete form of support for the certificate.

Please let me know if there is anything else that I can do to support the program.

Best,  
Duane

**Duane Roen**

Vice Provost, Polytechnic campus  
Dean, College of Integrative Sciences and Arts  
Dean, University College  
**Arizona State University**  
College of Integrative Sciences and Arts | [cisa.asu.edu](http://cisa.asu.edu)  
University College | [universitycollege.asu.edu](http://universitycollege.asu.edu)  
Mail Code: 2780  
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Mesa, AZ 85212-6415  
**P: 480-727-6513**



[CISA](#) | [CSRD](#) | [FYS](#) | [AISSS](#) | [UASP](#)

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**From:** Mark Manfredo  
**Sent:** Thursday, March 23, 2017 3:47 PM  
**To:** Duane Roen <Duane.Roen@asu.edu>  
**Subject:** RE: Certificate In Risk Management

Hi Duane,

Our proposal for the Certificate in Risk Management is going through our WPC vetting process. Michele Pfund (Dean for Undergraduate Studies) has asked me to get updated statements of support for the certificate. Can you write me another brief statement of support for the certificate? Can you also note that your school has the support to offer the COM 414 and OGL 421. I do have the syllabi now for both of those courses. I can forward what was provided to me by Kevin Ellsworth. He noted in his correspondence to me they would only offer the OGL 421 if they have the need to do so internally, but I don't see that as a constraint as it is an elective course and students can choose among a pretty broad set.

Thank you, and my sincere apologies for the inconvenience here.

Mark

**Mark R. Manfredo**

Arizona State University | W. P. Carey School of Business

Director - Morrison School of Agribusiness

Associate Dean – W. P. Carey School at ASU Polytechnic

[manfredo@asu.edu](mailto:manfredo@asu.edu) | Ph: 480.727.1040

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**From:** Duane Roen  
**Sent:** Sunday, August 28, 2016 2:42 PM  
**To:** Mark Manfredo <[manfredo@asu.edu](mailto:manfredo@asu.edu)>  
**Cc:** Kevin Ellsworth <[Kevin.Ellsworth@asu.edu](mailto:Kevin.Ellsworth@asu.edu)>; Ian Moulton <[IAN.MOULTON@asu.edu](mailto:IAN.MOULTON@asu.edu)>; Jared Vibbert <[Jared.Vibbert@asu.edu](mailto:Jared.Vibbert@asu.edu)>  
**Subject:** FW: Certificate In Risk Management

Mark,

Thanks for sharing this wonderful idea with me. I strongly support the proposal for a certificate in risk management.

I'm copying Kevin Ellsworth, who administers the OGL courses. We launched the OGL degree at Poly just recently, which explains why OGL 421 has not been offered. It was only an ASU Online degree until recently. We will work with you to figure out the cycle for offering the course at Poly.

I'm copying Ian Moulton so that we can take steps to offer COM 414 offered at Poly. Are there any other COM courses that we need to offer at Poly for any of your programs?

I think that this note is all that you need for an impact statement, but please let me know what else you need from us.

Best,  
Duane

**Duane Roen**  
Vice Provost, Polytechnic campus  
Dean, College of Integrative Sciences and Arts  
Dean, University College  
Arizona State University  
College of Integrative Sciences and Arts | [cisa.asu.edu](http://cisa.asu.edu)  
University College | [universitycollege.asu.edu](http://universitycollege.asu.edu)  
Mail Code: 2780  
7271 E Sonoran Arroyo Mall  
Mesa, AZ 85212-6415  
**P: 480-727-6513**



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**From:** Mark Manfredo  
**Sent:** Saturday, August 27, 2016 2:49 PM  
**To:** Duane Roen <[Duane.Roen@asu.edu](mailto:Duane.Roen@asu.edu)>  
**Subject:** Certificate In Risk Management

Hi Duane,

Last spring, Amy Hillman asked me to work on a Certificate in "Risk Management". Please see the attached draft proposal. The draft has already gone through a first read in the WPC Undergraduate Committee, and is slated for a second read on Friday. I am woefully behind in finalizing the preparation of this and am shooting for Wednesday for a closer to final draft.

In short, the idea of the certificate is provide business students (and possibly non business students if they take some pre-reqs) the opportunity for specialized training in risk management, largely defined as the identification, measurement, and management of risks that various firms are exposed to. For example, agribusiness firms are exposed to a number of risks (e.g., weather, commodity price risk, risk of supplier default, input cost risks, etc.) and there are a number of tools and techniques for managing such risks (e.g., futures and options, insurance, diversification, etc.) . The Morrison School has a long history of teaching and research in this area, hence Amy asked me to spearhead. In fact, this is largely where my research lies (e.g., agribusiness risk management, futures and options markets, risk modeling, etc.).

So, a few things you could help me with:

- 1) Could you write a brief letter of support for this certificate. This certificate has many Polytechnic touch points, namely that the BUS 434 course is a core course in the program, and so is the proposed Frontiers in Risk Management course, and the intent is to keep these at Poly or at worst iCourse for the latter (as Amy has an FY in mind where we may need to do a hybrid or iCourse). Also, AGB 360, and BUS 384 are taught at Poly, as well as AGB 435 (but currently iCourse).
- 2) I would like to also include the following courses on the list of electives: OGL 421 (Project Risk Management) and COM 414 (Crisis Risk Management). In a quick class search, I noticed that OGL 421 has not been taught on campus in over a year. This program is in CISA..correct? Do you know of an instructor who would have a syllabus? Also, COM 414 is taught in Tempe, but given we offer the BA Business – Communications concentration, could we get a section of COM 414 on campus? This would help the BA Business Comm majors, and, support the certificate. This looks like an awesome course.

Please let me know if you have any questions or concerns.

Thanks,

Mark

**Mark R. Manfredo**

**Arizona State University** | **W. P. Carey School of Business**

Director, Morrison School of Agribusiness

Associate Dean, W. P. Carey School @ ASU Polytechnic

Dean's Council Distinguished Scholar

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## Mark Manfredo

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**From:** Rong Pan  
**Sent:** Wednesday, March 29, 2017 3:47 PM  
**To:** Mark Manfredo  
**Cc:** Daniel McCarville  
**Subject:** Re: Certificate in Risk Management

Mark,

I support this proposal. I am glad to see that the students will be able to take IEE 454 as an elective.

Best regards,

Rong

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**From:** Mark Manfredo  
**Sent:** Thursday, March 23, 2017 4:46:29 PM  
**To:** Rong Pan  
**Cc:** Daniel McCarville  
**Subject:** RE: Certificate in Risk Management

Hi Rong,

Please see email stream below. I have attached the proposal for the Certificate in Risk Management in the W. P. Carey School of Business. The proposal will be read by our UG curriculum committee next week I believe. Please let me know if you have any questions. We do list IEE 454 as an elective. As you mention below, students would only be able to take if they meet prerequisites and that the course would only be available in Tempe.

Unfortunately, I have been very behind on this project given other projects this year.

One favor – our Dean for Undergraduate Programs asked that you provide an updated statement of support for the proposal and including this class. Please let me know if this is a problem.

Thank you,

Mark

### Mark R. Manfredo

Arizona State University | W. P. Carey School of Business

Director - Morrison School of Agribusiness

Associate Dean – W. P. Carey School at ASU Polytechnic

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[wpcarey.asu.edu](http://wpcarey.asu.edu) | [research.wpcarey.asu.edu](http://research.wpcarey.asu.edu)



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**From:** Rong Pan  
**Sent:** Monday, October 03, 2016 7:22 PM  
**To:** Mark Manfredo <manfredo@asu.edu>  
**Cc:** Daniel McCarville <DANIEL.MCCARVILLE@asu.edu>  
**Subject:** RE: Certificate in Risk Management

Mark,

No problem. When you have the proposal ready, please send us a copy. Thanks,

Rong

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**From:** Mark Manfredo  
**Sent:** Monday, October 03, 2016 7:15 PM  
**To:** Rong Pan  
**Subject:** RE: Certificate in Risk Management

Rong,

Thank you for getting back to me. I somehow initially missed this email, so my apologies. I had to move away from the proposal for a bit because of some other projects that came down the pipe at the same time, but I will pick this up again soon as it is something that I want to get done ASAP. I think what you include below is fine for students wishing to take IEE454.

Thank you again,

Mark

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**From:** Rong Pan  
**Sent:** Saturday, September 10, 2016 9:01 PM  
**To:** Mark Manfredo <[manfredo@asu.edu](mailto:manfredo@asu.edu)>; James Collofello <[JAMES.COLLOFELLO@asu.edu](mailto:JAMES.COLLOFELLO@asu.edu)>  
**Cc:** Daniel McCarville <[DANIEL.MCCARVILLE@asu.edu](mailto:DANIEL.MCCARVILLE@asu.edu)>  
**Subject:** RE: Certificate in Risk Management

Mark,

I talked to Dan about this. He's happy to have this class, IEE454 Risk Management, to be included in your certificate program, but there are two conditions:

1. Students need to complete the prerequisite class IEE380 Engineering Statistics, or an equivalent class.
2. Students need to take 454 in Tempe campus.

When you have the proposal, could you send us a copy, so we can look into the logistics? Thanks,

Rong

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**From:** Mark Manfredo  
**Sent:** Wednesday, September 07, 2016 6:17 PM  
**To:** James Collofello

**Cc:** Rong Pan  
**Subject:** RE: Certificate in Risk Management

Thank you. Please let me know if you have any questions. As noted, the proposal is “rough” and I am currently filling in the gaps.

Mark

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**From:** James Collofello  
**Sent:** Wednesday, September 07, 2016 6:02 PM  
**To:** Mark Manfredo <[manfredo@asu.edu](mailto:manfredo@asu.edu)>  
**Cc:** Rong Pan <[Rong.Pan@asu.edu](mailto:Rong.Pan@asu.edu)>  
**Subject:** FW: Certificate in Risk Management

Mark,

This looks like an interesting program. I am copying our IE Program Chair, Rong Pan, to respond.

jim

James S. Collofello  
Vice Dean for Academic and Student Affairs  
Professor of Computer Science and Engineering  
School of Computing, Informatics and Decision Systems Engineering  
Ira A. Fulton Schools of Engineering

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**From:** Mark Manfredo  
**Sent:** Monday, September 05, 2016 3:32 PM  
**To:** James Collofello  
**Cc:** Kay Faris  
**Subject:** Certificate in Risk Management

Hi Jim,

I am working on a proposal for a certificate in “Risk Management”. In short, the idea of the certificate is provide business students (and non-business students if they take the proper pre-reqs) the opportunity for specialized training in risk management, largely defined as the identification, measurement, and management of risks that various firms are exposed to. For example, firms are exposed to a number of risks such as weather, commodity price risk, risk of supplier default, financial risks such as interest rate and currency volatility, input cost risks, etc. and there are a number of tools and techniques for managing such risks (e.g., futures and options, insurance, diversification, self-insurance, etc.).

In looking for classes that may be appropriate to include, I came upon IEE 454 – Risk Management. I am thinking this certificate may be of interest to engineering students and/or students in the Economics & Engineering Management program? Would you be supportive of including this course in the certificate? If so, would you be willing to write a brief letter or statement of support? I think an email would suffice.

Also, I found a syllabus that was posted on the ASU class schedule for IEE 454 by Dan McCarville. Could I use this to include in the proposal? I don’t know what the protocol is for this when going outside of WPC.

I have attached a DRAFT of the proposal. I am still working on the final details in an attempt to get done by tomorrow evening for another read by our UG committee on Friday, but the narrative and the attached course structure should give you some idea of the thoughts behind the certificate.

Thank you,

Mark

**Mark R. Manfredo**

**Arizona State University** | **W. P. Carey School of Business**

Director, Morrison School of Agribusiness

Associate Dean, W. P. Carey School @ ASU Polytechnic

Dean's Council Distinguished Scholar

7271 E Sonoran Arroyo Mall | Mesa, AZ 85212

Ph: 480.727.1040 | Fax: 480.727.1961 | Email: [manfredo@asu.edu](mailto:manfredo@asu.edu)



## Mark Manfredo

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**From:** Thomas Bates  
**Sent:** Friday, March 24, 2017 1:41 PM  
**To:** Mark Manfredo  
**Subject:** RE: Risk Management Certificate

No worries Mark. This looks fine to me.

T

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**From:** Mark Manfredo  
**Sent:** Thursday, March 23, 2017 3:35 PM  
**To:** Thomas Bates <Thomas.Bates@asu.edu>  
**Subject:** RE: Risk Management Certificate

Hi Tom,

Please see email stream below. We are still working on getting the proposal for a Certificate in Risk Management through UG Committee. Michele Pfund asked me to get updated statements of support prior to sending through the UG Committee again for the next read, and to the Provost's Office.

The delay in all of this getting through is my fault. My only excuse is that it has been a very busy year.

Earla did provide me the syllabi for the courses listed below. I have also attached the proposal again for your convenience. You will note in the proposal that the Finance faculty listed as "participating" were the faculty included in some of the syllabi that Earla provided.

Please let me know if you have any questions or concerns.

Thank you,

Mark

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**From:** Thomas Bates  
**Sent:** Tuesday, September 06, 2016 7:14 AM  
**To:** Mark Manfredo <[manfredo@asu.edu](mailto:manfredo@asu.edu)>  
**Cc:** Laura Lindsey <[Laura.Lindsey@asu.edu](mailto:Laura.Lindsey@asu.edu)>; Earla Marshall <[earla@asu.edu](mailto:earla@asu.edu)>; Michael Hertzell <[Michael.Hertzell@asu.edu](mailto:Michael.Hertzell@asu.edu)>  
**Subject:** RE: Risk Management Certificate

Hi Mark,

We did discuss at the Department level and we are fine with the proposal. Earla will send you the syllabi for courses below this morning.

I heard you got hit with pneumonia again - I hope you are feeling much better.

See you this morning.

Tom

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**From:** Mark Manfredo  
**Sent:** Monday, September 05, 2016 4:19 PM  
**To:** Thomas Bates  
**Subject:** Risk Management Certificate

Hi Tom,

Earlier in the year, at the spring leadership retreat, I mentioned to you that Amy asked me to work on a certificate in "Risk Management". In spring I also emailed something to you in this regard...I believe that that I sent you the draft or at least an overview of the idea. Anyway, attached is the DRAFT that went through a first read of UG committee at the end of last semester. I am woefully behind in completing the proposal (still several areas to fill in, but the narrative and structure will give you some idea), but shooting for another read in UG committee for this Friday, which means I need materials in no later than tomorrow evening.

A few things you could help me with:

- 1) In the curriculum, I included FIN 300 (or honors equivalent) so students could leverage that. I also list FIN 427 Derivative Financial Securities and FIN 421 Security Analysis and Portfolio Management (assuming the students meets the pre-reqs). I can't recall exactly the number of classes a student can leverage for a certificate, but I believe it is 6 credits. Michelle tells me I need to include all syllabi for any proposed courses. Do you have syllabi on file for FIN 300, FIN 427, and FIN 421? Could I get copies to include in the proposal?
- 2) I assume you are ok with all of this. If you are not, please let me know. I will be at the admin council meeting if you want to visit.

Thanks,

Mark

**Mark R. Manfredo**

**Arizona State University** | **W. P. Carey School of Business**

Director, Morrison School of Agribusiness

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Ph: 480.727.1040 | Fax: 480.727.1961 | Email: [manfredo@asu.edu](mailto:manfredo@asu.edu)



## Mark Manfredo

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**From:** Dale Rogers  
**Sent:** Tuesday, April 11, 2017 8:04 AM  
**To:** Mark Manfredo  
**Subject:** Re: Risk Management Certificate

Mark,  
Go ahead. We will support this however you need us to do so.  
Dale

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**Dr. Dale S. Rogers**  
**Arizona State University | W. P. Carey School of Business**  
Professor, Logistics & Supply Chain Management  
Co-Director, Internet edge Supply Chain Lab  
[Dale.rogers@asu.edu](mailto:Dale.rogers@asu.edu) | Ph: 480.965.1456  
[wpcarey.asu.edu](http://wpcarey.asu.edu) | [research.wpcarey.asu.edu](http://research.wpcarey.asu.edu) | [internetedgelab.com](http://internetedgelab.com)



On Apr 10, 2017, at 1:41 PM, Mark Manfredo <[manfredo@asu.edu](mailto:manfredo@asu.edu)> wrote:

Dale,

It was nice visiting with you on Friday!

As I mentioned on Friday, I am working on a certificate in Risk Management. I have attached the proposal for your review. If possible, could you send me a brief email stating that you support the offering of the certificate? I did include a few SCM courses under the list of electives including SCM 314 or 315, and SCM 432. The list of elective courses are pretty liberal. Also, there is a new class proposed for the course (Frontiers in Risk Management) which we would teach out of the Morrison School, and I attach a sample syllabus for that. In your brief statement, can you also note that you are ok with this course. The course is being proposed for the core of the certificate.

You mentioned in our conversation that you are thinking about developing a “supply chain management risk” course down the way. I think something like this would be great to include. Once you get this, we can add it later if we need to make changes to the certificate once accepted. I know Amy mentioned that at some point IS would develop a course on cyber risk, so that could also be included down the road.

Michele would like to include this proposal at this week’s UG Curriculum Committee meeting, so if I could get a brief statement for your as soon as possible I would greatly appreciate it.

Thank you in advance,

Mark

**From:** Albert Boggess [<mailto:boggess@asu.edu>]

**Sent:** Thursday, October 12, 2017 5:34 PM

**To:** Mark Manfredo <[manfredo@asu.edu](mailto:manfredo@asu.edu)>

**Cc:** Jelena Milovanovic <[jmz@asu.edu](mailto:jmz@asu.edu)>; Ferran Garcia-Pichel <[ferran@asu.edu](mailto:ferran@asu.edu)>

**Subject:** Re: impact statement - certificate in risk management

Mark - in view of recent productive discussions you've been having with Dr. Jelena Milovanovic regarding your proposed BUS 436 and our ACT 302, I have no further concerns about your proposed Risk Management Certificate and recommend you proceed. I trust that you and Dr. Milovanovic will continue to coordinate the syllabi on the syllabi of these two courses for the mutual benefit your proposed certificate and ours. Thanks very much for consulting with us and I wish you good luck with your proposal.

Sincerely,

Al Boggess

On Wed, Sep 27, 2017 at 9:29 AM, Mark Manfredo <[manfredo@asu.edu](mailto:manfredo@asu.edu)> wrote:  
Al,

Thank you and my apologies for a late reply. I will contact Jelena soon to discuss BUS 436 overlap.

Thank you again,

Mark

Sent from my iPhone

On Sep 25, 2017, at 10:16 PM, Albert Boggess <[boggess@asu.edu](mailto:boggess@asu.edu)> wrote:

Mark,

Thank you for your query about your proposed Risk Management Certificate which looks like it has strong potential to add value to undergraduate majors in business and related areas. We also have a similar certificate program, already approved, in Analysis and Management of Insurance Risk which is an outgrowth of our undergraduate major in actuarial science. Jelena Milovanovic is the coordinator and is copied on this message. The one new course you have proposed for your certificate, BUS 436, appears similar to our ACT 302, Fundamentals of Risk Management (syllabus attached). I would recommend you and she meet to discuss this course overlap. Otherwise I have no other issues with your proposed certificate.

Al Boggess

On Mon, Sep 25, 2017 at 12:56 PM, Mark Manfredo <[manfredo@asu.edu](mailto:manfredo@asu.edu)> wrote:

Dear Professor Boggess,

My name is Mark Manfredo, and I am the Director of the Morrison School of Agribusiness in the W. P. Carey School of Business. Given much of my scholarly work focusses on risk management in the food and agribusiness industry, I have been spearheading the effort to develop an undergraduate certificate in Risk Management offered through the W. P. Carey School of Business. The certificate will be administered at the ASU Polytechnic Campus through my department (Morrison School of Agribusiness). The overarching objective of this proposed certificate is to give business students (and non-business students with the proper business pre-requisites) a framework for understanding how various risks impact the enterprise as a whole. Focus is placed on identifying, measuring, communicating, and managing a variety of risks (e.g., market risks, credit risks, operational risks, risks from international trade, weather risk, commodity price risk, etc.) encountered in the modern business environment across functional business areas (e.g., accounting, finance, supply chain, etc.) and firm type (e.g., food companies; financial firms; health care; sports organizations; etc.). Thus emphasis is placed on a holistic approach to risk management, often referred to in the business literature as Enterprise Risk Management (ERM). Our primary target audience for this proposed certificate is an undergraduate business student that desires additional education in business risk management applicable to all businesses types. This certificate is also multidisciplinary in nature, drawing from a number of disciplines within business (e.g., Supply Chain Management; Agribusiness; Finance) and among programs offered at the ASU Polytechnic Campus (e.g., Organizational Leadership; Communications).

Attached is the proposal. The Provost's office recommended that I get an impact statement from you regarding this proposal. My sincere apologies that I did not secure this impact statement earlier in the process. It was simply an oversight on my part. This certificate has been approved by the various faculty governance bodies of the W. P. Carey School of Business and we are prepared to send to CAPC.

Please let me know if you have any questions or concerns. Your support of this certificate proposal is greatly appreciated.

Sincerely,  
Mark

**Mark R. Manfredo**

Arizona State University | W. P. Carey School of Business

Director - Morrison School of Agribusiness

Associate Dean – W. P. Carey School at ASU Polytechnic

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## BUS 434

### Risk Management and Insurance

#### Course Syllabus

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**Instructor:** Dr. Ashok K. Mishra  
**Term:** Fall 2016  
**Meeting Time:** T Th 10:30 AM - 11:45 AM  
**Classroom:** AGBC 145  
**Midterm Exam:** TBD  
**Final Exam:** TBD  
**Office:** SanTan Hall 235M  
(480) 727-1288  
E-mail: [Ashok.k.Mishra@asu.edu](mailto:Ashok.k.Mishra@asu.edu)

**Office Hours:**  
Tuesday: 3:30 – 4:30 PM  
Thursday: 3:30 – 4:30 PM

#### **INTRODUCTION:**

The world is a risky place. One of the key insights you should have taken from principles of finance was that risk is more than a psychological phenomenon, but has real effects and real costs on firms of all types: a higher cost of capital, risk of bankruptcy, difficulty of retaining employees and many others. Risk need not be accepted, however. Because different people have different willingness' to accept risk, institutions have developed in the economy for firms to trade risk, for a fee, to those who would bare it. In this course, we want to learn about those institutions, and how to use them to help us become better financial managers. As you recall from principles of finance, performance by a financial manager is all about firm value. There are many ways in which risk can cause the value of a firm to fall, so risk management is an important element in any strategy to maximize firm value. All good things come at a cost, however, so in this course we will learn both the art and science of managing the tradeoff between the benefits of reducing or "laying off" risk with the costs of doing so.

#### **OBJECTIVES:**

This course is designed to achieve the following objectives, which are both specific to this field of study and general to the student's educational experience:

- (1) to understand what is meant by risk in a business context;
- (2) to develop a general framework for understanding risk management methods;
- (3) to learn how to measure risk and a firm's risk exposure;
- (4) to recognize the costs that risk imposes on the firm;
- (5) to learn different ways that managers can control the level of risk they face;

Beyond these specific objectives, the course also has broader objectives that are intended to help students grow as people and productive members of the economy. Specifically, these include:

- (6) to prepare the student for a productive career as a manager in a firm, or to go on to further graduate work in business or economics;
- (7) to train the student to think more broadly and in terms of universal principles while solving detailed, firm-specific business problems;
- (8) to communicate more effectively, in written, verbal, and multi-media formats;
- (9) to think critically and argue effectively.

### **W.P. CAREY SCHOOL OF BUSINESS LEARNING GOALS**

The Undergraduate Program of the W.P. Carey School of Business has established the following learning goals for its graduates:

- 1. Critical Thinking**
- 2. Communication**
- 3. Discipline Specific Knowledge**
- 4. Ethical Awareness and Reasoning**

### **REQUIRED TEXT**

- Doherty, Neil. *Integrated Risk Management: Techniques and Strategies for Managing Corporate Risk* New York: McGraw Hill. 2000. Chapters 1-7. (*D* in the Course Schedule below).
- Harrington, S. and G. Niehaus. *Risk Management and Insurance*, 2<sup>nd</sup> ed. New York: McGraw-Hill. 2004. Chapters 4, 6, 8, 27. (*H* in the Course Schedule below).
- Bodie, Z. A. Kane, and A. J. Marcus. *Essentials of Investments*, 9<sup>th</sup> ed. New York: McGraw-Hill. 2012. Chapters 14-16. (*B* in the Course Schedule below).

You will be responsible for reading, and understanding, the course notes that I will post on the website on a weekly basis:

The following readings will be of value in understanding the background behind many of the lectures.

- Vaughn, E. J. and T. Vaughn. *Fundamentals of Risk Management and Insurance: 11<sup>th</sup> EDITION*. John Wiley and Son, Inc., 2016.
- Smithson, C. W. *Managing Financial Risk: A Guide to Derivative Products, Financial Engineering, and Value Maximization*, 3<sup>rd</sup> ed. New York: McGraw-Hill. 1998.

### **OPTIONAL READING**

- Papers will be distributed in class.

## **METHOD OF EVALUATION**

A final grade for the course will be determined on the basis of the following weighting scheme:

- Assignments 20%
- Midterm Exam 30%
- Final exam 40%
- Participation 10%
- Optional project up to 10% bonus

Exceptions may be made for religious accommodation or university-sanctioned activities (see below).

An average percentage grade will be calculated for each student and converted to a letter grade (I do not use the plus I minus option as it is not in a student's best interest) based on the following scheme: A=80% -100%, B=70% -79%, C=60% -69%, D=50% -59%, E=<50%.

This project is briefly described below, but may be on any topic in risk management that interests the student. Any revisions to this scheme will be discussed in class and made clear well before the end of the term.

### **ATTENDANCE POLICY:**

Attendance in class is mandatory to pass. If a student misses more than 6 hours of lecture during the term, this will be considered grounds for failure, even if the earned grade is above the usual passing level.

### **COMPUTER APPLICATIONS:**

Students are expected to have, or to acquire early in the term, a functional knowledge of the following software packages or their equivalent: (1) Microsoft Excel, (2) Microsoft Word, and (3) Microsoft PowerPoint. We will also be using a program called @RISK that will help us describe and simulate the financial effects of risk. This software is on the ASU network and will be introduced early in the term.

### **PROJECT DESCRIPTION:**

The project consists of a detailed analysis of a real-world risk management program undertaken by a firm of the student's choice. This may be an example of either an effective risk management program, or one that has gone wrong. It is expected that the student will use concepts developed in class as they apply to the firm in question. It need not be quantitative in nature, although this is strongly encouraged as data analysis is fundamental to understanding the risks facing any firm in today's economy. The final paper itself is to be no more than 10 double spaced pages with all spreadsheet work, graphics, tables, or other numerical analysis in appendices at the end of the paper. All information gathered in the research process, whether through the library or the web, must be cited properly. Graduate students taking the course for graduate credit will be

required to do a longer paper (15 pages) that necessarily includes some quantitative (statistical) analysis of either financial or market data.

### **ACADEMIC INTEGRITY AND ETHICAL BEHAVIOR**

The W. P. Carey School takes academic integrity very seriously. Therefore, unless otherwise specified, it is imperative that you do your own work. Any suspected violations of academic integrity will be taken seriously and result in the following sanctions:

- A minimum of zero on the assignment OR
- A reduced grade in the course OR
- A failure in the course OR
- An XE which denotes failure due to academic dishonesty on the transcript OR
- Removal from the W. P. Carey School of Business

Additional information on ASU's academic integrity policy may be found at <http://provost.asu.edu/academicintegrity>

### **HONOR CODE**

Undergraduate students in the W.P. Carey School of Business must also adhere to the undergraduate honor code for academic integrity, which can be found at <https://my.wpcarey.asu.edu/academic-integrity/upload/Undergraduate-Honor-Code.pdf>

### **ACCOMMODATIONS FOR DISABILITIES:**

The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. One element of this legislation requires that all qualified students with documented disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you believe you have a disability requiring an accommodation, please contact the Disability Resource Center at ASU Polytechnic located in Sutton Hall (directly south of the Student Union), Suite 240, or call (480) 727-1039 I TTY: (480) 727-1009. Eligibility and documentation policies are available online at: <http://www.asu.edu/studentaffairs/ed/drc/>

### **RELIGIOUS ACCOMMODATIONS**

Accommodations will be made for students with religious holidays. Below is the calendar of official religious holidays. Each holiday noted with two asterisks denotes an observance for which work is not allowed. For these holidays, students will not be penalized in any way for missing class or assignment. This means that this will not count as an absence in class and they will be granted a makeup assignment or exam, etc. <https://provost.asu.edu/index.php?q=religious-holiday-calendar>

All requests for accommodation must be submitted by the end of the second week of class.

### **UNIVERSITY-SANCTIONED ACTIVITIES**

Accommodations will be made for students who miss class related to university-sanctioned activities according to ACD 304-02. If you are participating in a university-sanctioned activity, please let your instructor know as early in the course as possible so that accommodations can be made.

**THREATENING BEHAVIOR POLICY**

The university takes threatening behavior very seriously and these situations will be handled in accordance with the Student Services Manual, SSM 102-02, which can be found at: <http://www.asu.edu/aad/manuals/ssm/ssm104-02.html>

**Information contained within this syllabus (except grading and absence policies) is subject to change!!!**

## CLASS SCHEDULE:

### *Week One: Introduction to Risk Management and Insurance*

- The definition and measurement of risk
- Dimensions and sources of risk
- Risk management and the risk management process
- Overview of risk management products and practices
- Overview of risk management market
- Reading: D Ch. 1, 6.

### *Week Two: Measuring a Firm's Exposure to Risk*

- A More Technical Definition of Risk
- Historical Measures of Risk: Volatility
- Expected Utility and CE Measures
- Value at risk (VaR)
- Cash flow at risk (CaR)
- Risk profiles and factor models
- Managing risk as measured by VaR or CaR
- Moral Hazard and Adverse Selection
- Reading: D Ch. 2, 3.

### *Week Three: A General Framework for Risk Management and Risk Analysis*

- Integrated, or Enterprise Risk Management (ERM)
- Examples of ERM in practice: UGG Case Study
- ERM information requirements
- Introduction to @Risk software and the Coyote Cotton Model I
- Reading: D Ch. 1, H Ch. 27 and handouts.

### *Week Four: The Impact of Risk and Risk Management on the Firm*

- Portfolio Theory and Risk Management
- Review of Capital Market Theory: CAPM
- Does Risk Management Matter? Rationales for Risk Management
- The Risk Management Irrelevance Proposition
- Reading: D Ch. 4, 5, 7.

### *Week Five: Managing Risk with Insurance I: Insurance Markets*

- The Theory of Insurance
- Functions of an Insurance Market
- Functions of Insurance Firms: Rate Making, Underwriting, Adjustment and Investment
- Reading: H Ch. 4, 6, 8.

### *Week Six: Managing Risk with Insurance II: Agribusiness Insurance in the United States*

- Brief History of Farm Insurance

- Multiple-Peril Crop Insurance
- Revenue Insurance
- Area-based Crop Insurance Programs
- New Initiatives
- Reading: USDA-ERS "*Risk Management in U.S. Agriculture*"

*Week Seven: Risk Management with Forward Contracts*

- Structure of a Forward Contract
- Foreign Exchange Forwards
- Forward Interest Rate Agreements
- Commodity Forwards
- Using Forwards to Manage Different Sources of Risk
- Reading: D Ch. 6.

*Week Eight: Risk Management with Futures I: Contracts and Prices*

- Futures Contracts
- Structure of Futures Prices
- Basis Risk
- Reading: B Ch. 16.

*Week Nine: Risk Management with Futures II: Risk Management Strategies*

- Basic Hedging Strategies
- Cross Hedging
- Managing a Futures Hedge
- Reading: B Ch. 16.

*Week Ten: Risk Management with Options I: Options Markets*

- Option Contracts
- Types of Options
- Option Valuation
- Reading: B Ch. 14, 15.

*Week Eleven: Risk Management with Options II: Strategies*

- Payoff Diagrams
- Options as Hedge
- Hedging Interest Rate Risk
- Hedging Foreign Exchange Risk
- Hedging Commodity Price
- Reading: B Ch. 14.

*Week Twelve: Risk Management with Swaps*

- Defining and Describing Swaps
- Evolution of Swaps
- Pricing and Valuing Swaps

- Managing Risk with Swaps
  - swaps to reduce cost of financing
  - swaps to increase debt capacity
  - swaps to hedge firm level risk Investor and Government Use

*Week Thirteen: Risk Management Strategy*

- Duality and Globality
- Duality and Non-Linear Taxation
- Duality and Agency Costs
- Duality and Bankruptcy Costs
- Duality and Crowding Out
- Leverage and Contingent Financing

*Week Fourteen: Post-Loss Investments and Contingent Financing*

- Firm Valuation
- Measurement of Loss
- Recapturing Loss
- Post-Loss Financing

*Week Fifteen: Financial Engineering and New Products*

- Suppliers of Derivatives
- Financial Innovation and Financial Engineering
- Embedded Derivatives
- Weather Derivatives and other Over-the-Counter Markets (OTC)

**COURSE: BUS 436 - Frontiers in Risk Management**

**Term: XXX SLN: #####**

**Professor: Name, Office: Location, Telephone: #####**

**Office Hours: XXXXX, Class: Schedule and Location**

E-mail: [XXX.XXXX@asu.edu](mailto:XXX.XXXX@asu.edu)

## **Course Description**

This course highlights practices and challenges faced by firms in terms of identifying, measuring, and communicating a variety of business and financial risks, as well as designing and implementing risk management strategies as a critical component of the overall strategic management process. Emphasis is placed on considering a variety of financial and non-financial risks in a holistic framework.

## **W. P. Carey School of Business Learning Goals**

The Undergraduate Program of the W.P. Carey School of Business has established the following learning goals for its graduates:

- 1. Critical Thinking**
- 2. Communication**
- 3. Discipline Specific Knowledge**
4. Ethical Awareness and Reasoning
5. Global Awareness

## **Course Objective**

Develop an understanding of the risk management practices and challenges faced by firms in a variety of businesses settings and industries.

## **Pre-requisites**

BUS 434 – Risk Management and Insurance (or taken concurrently / co-requisite)

## **Learning Outcomes**

Upon completion of this course students should be able to:

- Assess complex risk management situations and scenarios faced by real firms.

- Engage the enterprise risk management (ERM) paradigm in developing sound risk management practices across the firm.
- Apply risk management taxonomy in describing various risks (e.g., market risk, operational risk, policy risk, etc.).
- Discuss the appropriateness of various risk management tools and strategies including insurance products, derivatives, self-insurance, diversification, among others.
- Enhance critical thinking and communication skills (oral and written) through case study analysis.

## Required Textbook and Other Materials

### *Primary Text:*

Lam, J. *Enterprise Risk Management – From Incentives to Controls: Second Edition*. John Wiley and Sons, 2014. Hoboken, New Jersey.

### *Case Studies and Readings:*

This course will also rely on case studies and other readings sourced through Harvard Business School Publishing (HBS) and other outlets. These readings will be made available through the ASU bookstore or an online ordering procedure.

See “Sample Cases and Readings” at the end of this syllabus.

It is considered a violation of academic integrity to utilize course materials which are illegally sourced. Please ensure that you are ordering and paying for your own materials as outlined in the ordering instructions.

## Grading and Course Requirements

<b>Requirement</b>		<b>Points</b>
Case Reports	3 @ 60 pts	180 pts
Case and Reading Discussion	8 @ 15 pts per discussion	120 pts
Risk Management Plan	1 @ 100 pts	100 pts
Exams	2 @ 100 pts	200 pts
<b>Total Points</b>		<b>600 Points</b>

**Sample Grading Scale:** 90% to 100% (540 to 600) = A  
 80% to 89.9% (480 to 539) = B  
 70% to 79.9% (420 to 479) = C  
 60% to 69.9% (360 to 419) = D  
 Less than 60% (<359) = E

## Graded Material

*Case Reports* – Students will provide a copy of their write up of case questions prior to examination of a case. The case questions are designed to help foster discussion. Students should answer / prepare the case questions prior to each case discussion. Three case reports must be turned in for grading during the course of the semester.

*Case and Reading Discussions* - The discussion of case studies and assigned readings is an important component of the course. Class participation is essential. Class participation, including quantity and quality of discussion, is assessed after each class session by the instructor. Therefore, it is important that students come to class prepared to discuss cases and assigned readings.

*Risk Management Plan* – Students must provide a comprehensive risk assessment and management plan for a business of their choice. Student’s must discuss the business and get approval for their project before commencing the project.

*Exams* – There will be two exams for this course. The exams will help to reinforce key risk management concepts that are derived from the readings, lectures, and case studies.

## Weekly Schedule of Topics, Readings, and Assignments:

<u>DATE</u>	<u>TOPIC</u>	<u>READING</u>	<u>Assignments</u>
Week 1	Course introduction and review of general risk management concepts	HBS – A Technical Note on Risk (Fletcher & Newell)  Lam – Chapters 1 to 3 (Introduction; Lessons Learned; Concepts and Processes)	
Week 2	Sources of volatility, financial performance & common risk measures: standard deviation and Value-at-Risk (VaR)	Instructor notes and spreadsheet examples  HBS – Understanding Corporate Value-at-Risk Through a Comprehensive and Simple Example (Bertoneche & Maurer)	Discussion – Understanding Corporate Value-at-Risk

Week 3	The Enterprise Risk Management (ERM) Framework	Lam – Chapters 4, 5, 6 (What is ERM?; Corporate Governance; Line Management)  HBS – The Challenges and Solutions for Implementing Enterprise Risk Management (Fraser & Simkins)	Discussion – The Challenges and Solutions for Implementing Enterprise Risk Management
Week 4	Portfolio theory as an underlying concept in ERM – risks must not be considered in “silos”	Lam – Chapter 7 and 8 (Portfolio Management; Risk Transfer)  Enterprise Risk Management at Hydro One (Multimedia Case)	Discussion of Hydro One Case & Case Reports Due
Week 5	Developing a high level risk taxonomy: market risks, operational risks, credit risks	Lam – Chapters 3 & 9 (Concepts and Processes; Risk Analytics)	
Week 6	Examining risk taxonomy	HBS – Managing Risks: A New Framework (Kaplan & Mikes)  HBS – Managing Risks in the New World (Kaplan et al.)	Discussion of HBS Articles & Case Reports Due
Week 7	Guest speaker – Risk Management Practices at Intel / Andre Lowe (to be invited)		Exam 1
Week 8	Credit risk – identification, scope, measurement, and management	Lam – Chapter 12 (Credit Risk Management)	
Week 9	Case study - credit risk	HBS – Risk Management at Wellfleet Bank: Deciding about “Megadeals” (Mikes)	Discussion of Wellfleet Case & Case Reports Due

Week 10	Market risk – identification, measurement, and management	Lam – Chapter 13 (Market Risk Management)	
Week 11	Case study - market risk	HBS – Olam: On a New Course (Bell et al.)	Discussion of Olam Case & Case Reports Due
Week 12	Operational risk – identification, scope, measurement, and management	Lam – Chapter 14 (Operational Risk Management)	
Week 13	Case study – operational risk	HBS – Managing Operational Risk at Mars, Inc. (Johnson & Warner)  HBS – Chipotle Mexican Grill: Food with Integrity?	Discussion of Mars & Chipotle Cases & Case Reports Due
Week 14	Tying it together – risk management planning and top risks for the future	Executive Perspectives on Top Risks for 2017: Executive Summary (NC State ERM Initiative & Protiviti) <a href="https://erm.ncsu.edu/az/erm/i/chan/library/NC-State-Protiviti-Survey-Top-Risks-2017-Executive-Summary.pdf">https://erm.ncsu.edu/az/erm/i/chan/library/NC-State-Protiviti-Survey-Top-Risks-2017-Executive-Summary.pdf</a>	Discussion of “Top Risks for 2017”
Week 15	Review and final exam		Exam 2 – time and location TBD  Risk Management Plan Due

## Sample Cases and Readings

Note – abstracts are taken (verbatim) from Harvard Business School publishing. These abstracts are presented so students can get a better understanding of the types of cases and readings presented in the course. Cases and readings are subject to change.

## **A TECHNICAL NOTE ON RISK MANAGEMENT**

Donna Fletcher; Susan Newell (May 24, 2007) - Product #: 907M43-PDF-ENG

This technical note focuses on risk management in a project-based organization. Risk management is discussed at the organizational and project levels. Three components of risk management are mentioned: risk assessment, risk management plan, and risk monitoring. Recent thinking in risk management has gone beyond financial risk management and incorporates enterprise risk management (ERM). Finally, the technical note links risk management to strategy, and notes the importance that the implementation of both has on the performance of the firm.

## **MANAGING RISKS: A NEW FRAMEWORK**

Robert S. Kaplan; Anette Mikes

Harvard Business Review (Jun 1, 2012) – Product #R1206B-PDF-ENG

Risk management is too often treated as a compliance issue that can be solved by drawing up lots of rules and making sure that all employees follow them. Many such rules, of course, are sensible and do reduce some risks that could severely damage a company. But rules-based risk management will not diminish either the likelihood or the impact of a disaster such as Deepwater Horizon, just as it did not prevent the failure of many financial institutions during the 2007-2008 credit crisis. In this article, Robert S. Kaplan and Anette Mikes present a categorization of risk that allows executives to understand the qualitative distinctions between the types of risks that organizations face. Preventable risks, arising from within the organization, are controllable and ought to be eliminated or avoided. Examples are the risks from employees' and managers' unauthorized, unethical, or inappropriate actions and the risks from breakdowns in routine operational processes. Strategy risks are those a company voluntarily assumes in order to generate superior returns from its strategy. External risks arise from events outside the company and are beyond its influence or control. Sources of these risks include natural and political disasters and major macroeconomic shifts. Risk events from any category can be fatal to a company's strategy and even to its survival. Companies should tailor their risk management processes to these different risk categories. A rules-based approach is effective for managing preventable risks, whereas strategy risks require a fundamentally different approach based on open and explicit risk discussions. To anticipate and mitigate the impact of major external risks, companies can call on tools such as war-gaming and scenario analysis.

## **MANAGING RISK IN THE NEW WORLD**

Robert S. Kaplan; Anette Mikes; Robert L. Simons; Peter Tufano; Michael Hofmann; David Champion

Harvard Business Review (Oct 1, 2009) - Product #: R0910E-PDF-ENG

Five experts gathered recently to discuss the future of enterprise risk management: Kaplan, the Baker Foundation Professor at Harvard Business School, who with his colleague David Norton developed the balanced scorecard; Mikes, an assistant professor at HBS who studies the evolution of risk management and the role of the chief risk officer; Simons, the Charles M. Williams Professor of Business Administration at HBS; Tufano, the Sylvan C. Coleman Professor of Financial Management at HBS; and Hofmann, the chief risk officer at Koch Industries. The panel was moderated by HBR senior editor David Champion. Among the questions they addressed were: How predictable was the financial meltdown of 2008-2009? Did new tools for assessing risk give a false sense of security? How do the challenges facing industrial companies differ from those facing the financial sector? Is outsourcing an effective risk-management tool? Have capital structures become a bit too efficient in many companies? What makes a good chief risk officer?

Of all the management tasks that were bungled in the period leading up to the global recession of 2008--2009, none was bungled more egregiously than the management of risk. This HBR Spotlight attempts to untangle the reasons that major systemic failures occurred, and to pin down some lessons for leaders and managers in the future.

## **THE CHALLENGES OF AND SOLUTIONS FOR IMPLEMENTING ENTERPRISE RISK MANAGEMENT**

John R.S. Fraser; Betty J. Simkins

Business Horizons (Nov 15, 2016) - Product #: BH775-PDF-ENG

Enterprise risk management (ERM) began to take root in the late 1990s and has since become generally recognized as an expectation of good management and corporate governance. However, as evidenced by surveys and research, many companies still struggle with ERM implementation. This article explores the challenges companies face when implementing ERM and offers solutions for firms struggling with the concepts and execution. We draw upon Hydro One's experience in achieving ERM maturity as a best practice case study. The company's ERM methods have been researched and documented extensively. With over 15 years of ERM success, Hydro One is an excellent organization to benchmark for ERM best practices.

## **UNDERSTANDING CORPORATE-VALUE-AT-RISK THROUGH A COMPREHENSIVE AND SIMPLE EXAMPLE**

Marc L. Bertoneche; Frantz Maurer (Mar 16, 2017) - Product #: 206046-PDF-ENG

Using a comprehensive and simple example of a firm exposed to foreign exchange risk, interest rate risk, and commodity price risk, shows how to use corporate-value-at-risk to measure and manage a firm's global exposure to risk.

## **ENTERPRISE RISK MANAGEMENT AT HYDRO ONE, MULTIMEDIA CASE**

Anette Mikes (Jun 9, 2010) - Product #: 110707-HTML-ENG

An early adopter of Enterprise Risk Management, energy giant Hydro One anticipated new threats and opportunities in an industry that faced climate change and carbon legislation, the deregulation of electricity markets, and the greater adoption of renewable technologies. CEO Laura Formosa felt Hydro One's risk profile had shifted, to the extent that she had to ask herself - was the strategy tenable? The case provides a rich description of Enterprise Risk Management in action, and shows how Hydro One executives arrive at a shared understanding of the risk profile of the company. In the narrative a diverse group of managers (the chief executive, the chief financial officer, the head of the public relations and the chief regulatory officer) voice their views on the risks, collectively bringing a multiple stakeholder perspective to the risk profile. The case challenges users to define the problems and risks that the company faces, given its strategic objectives, its evolving risk profile, and the changing environment. The case also offers a discussion ground for defining the role of the chief risk officer, and the relationship between risk management, strategic planning and capital budgeting.

## **RISK MANAGEMENT AT WELLFLEET BANK: DECIDING ABOUT "MEGADEALS"**

Anette Mikes (Mar 16, 2017) - Product #: 109071-PDF-ENG

This case introduces risk management in the context of corporate lending, one of the bread-and-butter functions of commercial banks. It evokes the cultural tension between the risk function and the business line, which in this organization reverberated long after the decisive votes were cast at the group credit committee. The case further motivates debate on calculative cultures, and the role of model-based risk assessments in decision-making, and underlines the role of judgment in risk decisions. Modeling and judgment carry different weight in different types of risk decisions. While risk models can be relied upon as the key decision-makers in a retail banking environment (e.g. credit card applications), in the case of large credit decisions, their reliability is, generally, low. This is because the key features of the proposals at hand cannot all be condensed into risk metrics; as in these proposals, several "qualitative" issues arise that the decision-maker needs to judge in tandem with the quantitative metrics. The exercise also highlights that model-based risk metrics are themselves judgmental (they reflect the assumptions of the modeler) and that their use must be as much an art as a science. The story has got a temporal dimension: one proposal was current in mid-2006, the other in late 2008, two very different credit environments.

## **OLAM: ON A NEW COURSE**

David E. Bell; Forest Reinhardt; Mary Shelman (Dec 17, 2012) - Product #: 513044-PDF-ENG

From modest beginnings as a cashew trader in Nigeria, Olam, founded by Indian nationals in 1989, has grown into a leading global agricultural trading company, with annual revenues of \$14 billion. The company recently has begun investing in farms and in the production of packaged goods, shifting from its traditional focus on the midstream of the value chain. The case raises questions involving competitive positioning, corporate strategy, sustainable development, and the management of business and political risk. Learning Objectives: Understand the changes that are occurring in the value chains for agricultural commodities and the resultant opportunities for firms. Understand the costs and benefits of increasing vertical, horizontal, and geographic scope within the firm. Explore the relationships between sustainable development and company strategy. Examine and evaluate firm strategies for managing business risk in commodities, including price risk, counterparty risk, holdup risk, and political risk. Consider the roles of leadership and corporate culture in creating and maintaining strategic advantage.

## MANAGING OPERATIONAL RISK AT MARS, INCORPORATED

Lauren Keller Johnson; Larry Warner (Nov 13, 2009) - Product #: B0911E-PDF-ENG

A diversified consumer products giant with global operations can't afford to ignore risks to the strategic initiatives launched by its business units. At Mars, Incorporated, executives set out to foster a culture in which managers aren't afraid to talk about, wrestle with, and vanquish the perils that can prevent crucial initiatives from generating desired business results.

## CHIPOTLE MEXICAN GRILL: FOOD WITH INTEGRITY?

Russell Walker; Greg Merkley (Jan 5, 2017) - Product #: KEL979-PDF-ENG

By any measure, Chipotle Mexican Grill was a success story in the restaurant business. It grew from one location in 1993 to over 2,000 locations by 2016 and essentially created the fast casual dining category. Its stock appreciated more than 1,000% in the ten years following its 2006 IPO. However, after more than 20 years without a major reported food safety incident, Chipotle was revealed as the source of multiple outbreaks of illness from norovirus, salmonella, and E. coli that sickened nearly 600 people in 13 states in 2015. The company closed stores, spent several months under investigation by the U.S. Centers for Disease Control and Prevention (CDC) and other health organizations, and faced a criminal investigation in connection with the incidents. After a much-publicized closing of all of its stores on February 8, 2016, and numerous changes to its food sourcing and preparation practices, Chipotle tried to win back customers with dramatically increased advertising and free food promotions. However, on April 26, the chain announced its first-ever quarterly loss as a public company. Same-store sales for the first quarter were 29.7% lower than in the previous year. Operating margins fell from 27.5% to 6.8% over the same period, and the company's share price was down 41% from its summer 2015 high. Learning Objective: After reading and analyzing the case, students will be able to identify ways in which Chipotle could have minimized operational risk through governance and measurement; assess Chipotle's actions to rebuild consumer trust; and suggest approaches to demonstrating recovery and safety when the new product looks no different than the old product.

## Academic Integrity and Ethical Behavior

The W. P. Carey School takes academic integrity very seriously. Therefore, unless otherwise specified, it is imperative that you do your own work. Any suspected violations of academic integrity will be taken seriously and result in the following sanctions:

- A minimum of zero on the assignment OR
- A reduced grade in the course OR
- A failure in the course OR
- An XE which denotes failure due to academic dishonesty on the transcript OR
- Removal from the W. P. Carey School of Business

Additional information on ASU's academic integrity policy may be found at <http://provost.asu.edu/academicintegrity>

## Honor Code and Professionalism Policy

Please review the W. P. Carey School of Business honor code for undergraduate students. The honor code can be accessed via the following link:

<https://my.wpcarey.asu.edu/academic-integrity/upload/Undergraduate-Honor-Code.pdf>

If you are taking this course as a graduate student, please reference the W. P. Carey honor code for Master's Programs at:

<https://my.wpcarey.asu.edu/academic-integrity/upload/MBA-Honor-Code.pdf>

## Religious Accommodations

Accommodations will be made for students with religious holidays. Below is the calendar of official religious holidays. Each holiday noted with two asterisks denotes an observance for which work is not allowed. For these holidays, students will not be penalized in any way for missing class or assignment. This means that this will not count as an absence in class and they will be granted a makeup assignment or exam, etc.

<https://provost.asu.edu/index.php?q=religious-holiday-calendar>

All requests for accommodation must be submitted by the end of the second week of class.

## University-Sanctioned Activities

Accommodations will be made for students who miss class related to university-sanctioned activities according to ACD 304-02.

If you are participating in a university-sanctioned activity, please let your instructor know as early in the course as possible so that accommodations can be made.

## Tutoring Support

While there is not a specific tutor for this class, please note that the W. P. Carey School of Business provides free tutoring in BA 201 for a number of undergraduate business classes. Assistance with writing is also provided.

More information regarding courses offered and hours are available here:

<https://my.wpcarey.asu.edu/undergrad/student-success/success-center.cfm?>

In addition to the W. P. Carey Student Success Center, Arizona State University provides writing assistance through multiple platforms – including in class workshops (within your course!).

More information can be found here: <http://studentsuccess.asu.edu/writingcenters>

## Threatening Behavior Policy

The university takes threatening behavior very seriously and these situations will be handled in accordance with the Student *Services Manual*, SSM 102-02

<http://www.asu.edu/aad/manuals/ssm/ssm104-02.html>.

## Expected Classroom Behavior

It is important that the classroom environment is conducive to learning. Please turn off all cell phones/smart phones during class, and please place smart phones and similar devices in backpacks or other locations such that they are not disruptive to others. Note may be taken on laptops or similar devices as long as keyboard noise is not distracting to others. If you want to

record lectures (audio record), please ask the instructor for permission. Please note the policy on Threatening Behavior above.

## **Absence Policies**

Attendance is required. However, everyone from time to time has to miss class for various reasons. Please do your best to inform the instructor of any planned absences ahead of time. Students will be responsible for any missed work. This is particularly important if you will be absent for an exam. Make-up exams will be given for legitimate school functions, medical emergencies, etc. If you miss an exam, and there is not a valid excuse (e.g., documented medical emergency, etc.) nor was it discussed with the instructor ahead of time (e.g., planned absence), you will receive a zero for the given exam. Any assignments associated with a planned or excused absence will be given additional time to complete. Consult with instructor for details.

## **Disability Accommodations**

If you need an accommodation for a disability, you must register with the Disability Resource Center (DRC).

**Information contained within this syllabus (except grading and absence policies) is subject to change.**

**\*\*Disclaimer\*\***

This syllabus is to be used as a guideline only. The information provided is a summary of topics to be covered in the class. Information contained in this document such as assignments, grading scales, due dates, office hours, required books and materials may be from a previous semester and are subject to change. Please refer to your instructor for the most recent version of the syllabus.

**Course: FIN 300 FUNDAMENTALS OF FINANCE**  
**ARIZONA STATE UNIVERSITY Fall 2016 SLN 74136**

**9:00 – 10:15 am T TH Peralta 301**

FIN 300 provides an introduction to the valuation of real and financial assets with applications to financial management. Topics include financial statements, cash flows, time value of money, risk and return, bond valuation, stock valuation, cost of capital, capital budgeting, and capital structure. This is a rigorous course with a strong emphasis on problem solving.

**Instructor:** David R. Hoffman BAC 586 965-1648  
(David.Hoffman@asu.edu)

**Office Hours:** 10:15 – 10:45 am T TH (2:15 – 3:00 pm MW in Tempe) and by appointment

**FIN 300 TAs:** TBA Office Hours to be posted on Blackboard  
In addition to class tutors, WPCarey also provides free tutoring. Please see:  
<https://my.wpcarey.asu.edu/undergrad/student-success/success-center.cfm?>

**Textbook:** *Fundamentals of Corporate Finance 3<sup>rd</sup> edition*; Parrino, Kidwell, and Bates; Wiley; 2014  
WileyPlus is not required but you may find it helpful for studying.

The Undergraduate program of the W.P. Carey School of Business has established the following learning goals for its students (Items in bold have significant coverage in this course):

- 1. Critical Thinking**
2. Communication
- 3. Discipline Specific Knowledge**
4. Ethical Awareness and Reasoning
5. Global Awareness

This course is designed to teach students how to think critically about financial issues facing financial managers in the real world. By course end, students are expected to understand financial terms and theory and solve basic financial problems.

**Notes:** There will be three exams given during the semester which will be weighted equally. Exams will consist of multiple choice questions. If an exam is missed for any reason, it will be made up during final's week with the comprehensive final. No makeup exams will be given during the semester. The final exam may be taken to replace a lower exam score. All grades will be posted on Blackboard. Students must notify me within one week after a score posting regarding any recording errors, after the last day of class recording errors will not be changed.

Due to the subject matter, an appropriate calculator is required and should be brought to each class session. Sharing of calculators or the use of a cell phone on exams or quizzes is not allowed and is considered cheating. All cell phones are to be turned off during class.

There will be up to five take-home assignments and/or in class quizzes given during the semester. Quizzes will be announced in class the class before they will be given and will be open notes (not open Laptop). Some quizzes may be online. Late assignments will be accepted for up to half credit provided they are turned in the following class period and the assignment was not worked out in class.

There will be three Excel assignments made during the semester. These assignments are designed, graded

and recorded by Linda Prince ([Linda.Prince@asu.edu](mailto:Linda.Prince@asu.edu)). Late assignments are not accepted.

Extra Credit .....There will be up to eight extra credit papers &/or in class opportunities assigned during the semester. The papers will be based upon current events from the Wall Street Journal or other approved source. Each paper is to be typed, single-spaced (one full page) with a copy of the article stapled (otherwise no credit will be given). The in class extra credit may be a homework problem or class problem. In class extra credit may not be made up if missed.

All exams, quizzes, assignments and extra credit opportunities are to be taken and turned in during the class time you are registered for. Any quiz/assignment/extra credit emailed to me without prior approval will not be graded.

All University policies and procedures will be followed, including:

1. **WPCarey Student Professionalism Policy:**  
<https://students.wpcarey.asu.edu/resources/undergraduate-handbook>
2. Information on **ASU's academic integrity policy** may be found at:  
<http://provost.asu.edu/academicintegrity>
3. Please familiarize yourself with the **Undergraduate Honor Code** below:  
<https://my.wpcarey.asu.edu/academic-integrity/upload/Undergraduate-Honor-Code.pdf>
4. **Religious accommodations:** Accommodation will be made for students with religious holidays. The following is a link to the calendar of official religious holidays. All requests for accommodations must be made a week before.  
<https://provost.asu.edu/index.php?q=religious-holiday-calendar>
5. **University-sanctioned activities:** Accommodations will be made for students who miss class due to university-sanctioned activities according to ACD 304-02. All requests for accommodations must be made a week before.
6. The university takes **threatening behavior** very seriously and these situations will be handled in accordance with the Student Services Manual, SSM 102-02:  
<http://www.asu.edu/aad/manuals/ssm/ssm104-02.html>

I reserve the right to make any necessary changes to better serve the needs of this particular class.

**Grading:** Final grades will be determined by:

<u>Exam*</u>	<u>Points</u>	<u>% of Grade</u>	<u>Date</u>	The following grading scale will be used:
1	50	20	Sep 15	A 215 - 250
2	50	20	Oct 20	B 190 - 214
3	50	20	Nov 22	C 150 - 189
Assignments/Quizzes	70	28	TBA	D 125 - 149
Excel Module	30	12		E Below 125

\* A comprehensive final exam will be offered for all make-up exams.

<u>Week</u>	<u>Week of (T)</u>	<u>TOPIC</u>
1	Aug 16	Introduction and Interest rates
2	Aug 23	Financial Statements and Taxes
3	Aug 30	Analyzing Financial Statements
4	Sep 6	Financial Forecasting and Budgeting <b>(EXCEL 1 DUE 11:59pm Sep 8)</b>
5	Sep 13	<b>EXAM I (Over weeks 1 – 4) (Thurs Sep 15)</b>
6	Sep 20	Time Value of Money
7	Sep 27	Risk and Return
8	Oct 4	Bond Valuation and Stock Valuation
9	Oct 11	Stock Valuation <b>(EXCEL 2 DUE 11:59pm Oct 13)</b>
10	Oct 18	<b>EXAM II (Over weeks 6 – 9) (Thurs Oct 20)</b>
11	Oct 25	Cost of Capital
12	Nov 1	Capital Budgeting
13	Nov 8	Capital Budgeting
14	Nov 15	Leverage <b>(EXCEL 3 DUE 11:59pm Nov 17)</b>
15	Nov 22	<b>EXAM III (Over weeks 11 -14) (Tues Nov 22)</b>
16	Nov 29	<b>Comprehensive Make-Up /Final Exam in Peralta 301 (Thurs Dec 1)</b>



ARIZONA STATE UNIVERSITY  
W.P. Carey School of Business  
SLN: 13969  
TTh 1:30-2:45, BA 258

Professor Laura Lindsey

Spring 2016

## **Course Syllabus: FIN 303- Honors Finance**

### Contact Information

Email: Laura.Lindsey@asu.edu

Office: BAC 522

Phone: (480) 965-0523

Office Hours:

Fridays 2:00 – 3:00  
(and by appointment)

Please note that the best way to get in touch with me is by email. I do not check voice messages frequently for the office phone number listed above.

### **Course Description**

Introduction to basic principles of finance, practical tools for financial decision-making, and evaluation methods employed by firms.

### **W. P. Carey School of Business Learning Goals**

The Undergraduate Program of the W.P. Carey School of Business has established the following learning goals for its graduates:

- 1. Critical Thinking**
2. Communication
- 3. Discipline Specific Knowledge**
4. Ethical Awareness and Reasoning
5. Global Awareness

Items in bold have significant coverage in this course.

### **Teaching Philosophy, Course Objectives, and Course Learning Outcomes**

The primary objective of this course is to provide a market-oriented framework for analyzing the major types of financial decisions made by corporations. Lectures and readings will provide an introduction to present value techniques, capital budgeting principles and problems, asset valuation, the operation and efficiency of financial markets, and the financial decisions of firms.

After completion of the course, a student should have a solid grounding in corporate finance, including proficiency in financial analysis, planning, and decision-making, with value creation as a central business policy goal. In addition, the course will help to develop perspective and judgment in business decisions and an appreciation for decision-making in a complex world.

This course will require considerable preparation. The class is centered on lectures and is accompanied by related reading assignments and problem sets. The best way to master the material (and prepare for exams) is to work the assigned problems. In preparing for exams, the

most weight should be given to material covered in class, including problem sets. It is very important that you keep up with the assigned work so that you will not be overwhelmed at exam time.

### **Required Textbook and Other Materials**

The text for this course is Berk and DeMarzo, *Corporate Finance*, published by Pearson/Addison-Wesley. It is available for purchase at the bookstore. (You do NOT need to purchase the version with Finance Lab® access.) There are many alternative purchase options for this text, which we will discuss in class. Note that it is considered a violation of academic integrity to utilize course materials that are illegally sourced.

Class Notes will be available via the Blackboard system. You will need a calculator in order to work the assigned problems on homework and exams. Make sure it has the ability to take the root of a number and raise a number to a power. Additionally, access to Excel software is needed.

### **Grading and Course Requirements**

Your grade will be determined by your performance on 2 midterms, problem sets, an Excel tutorial, and a final exam. The exams will consist primarily of quantitative problems. The final exam will count for 35% of your final grade and is comprehensive. The two midterms will count 25% each. The remaining 15% of your grade will be determined by problem sets (5%), two mini-cases (5%), and the Excel tutorials (5%). The mini-cases can be done in groups.

Make-up exams are given only under extreme circumstances with appropriate third-party documentation. If you miss a midterm exam and no make-up is given, other exams will be re-scaled to calculate the total grade.

Grading Scale: 98% and above =A+, 95-97%=A; 90-94%=A-; 87-89%=B+; 84-86%=B; etc.  
A curve may be applied to improve raw scores, but not to reduce them.

### **Assignments**

There will be problem sets or mini-cases due approximately each week. I will announce the assignment in class and post the assignments on the course web site that you can access via the Blackboard system. Due dates are listed on the attached Course Schedule.

Regular problem sets will be collected and graded for completeness. There will be five problem sets in total. You may work in groups, though you should hand in an individual write-up. There will also be group “mini-case” assignments, for which you will turn in one solution per group. The “mini-case” assignments will be graded for accuracy. In addition, assignments are due at the BEGINNING of each class period.

The reading assignments will roughly follow the schedule outlined below, with any substantial deviations announced in class. You may wish to read the material prior to the class meeting for which it is scheduled.

In addition, all 30X level finance classes include a 3-part Excel module. These will be administered via Blackboard. Late assignments are not accepted.

## **Examinations**

There will be two mid-term exams and one final exam, which is comprehensive. A formula sheet is provided as part of all exams. For the final exam, you are allowed to prepare one 8.5" x 11" page of notes for use during the test.

## **Classroom Policies**

Out of consideration for others, all mobile electronic devices should be kept silent during class. You may use laptops or similar aids as necessary to review or take notes. You may record classroom sessions for personal use only. Any transfer or public posting of class materials is considered a violation of copyright.

## **Academic Integrity and Ethical Behavior**

Midterms and finals must be strictly individual work. You may not use notes, texts, or any aids other than a calculator except as indicated for the final exam as described above. You must neither give help to nor receive help from any other person.

The W. P. Carey School takes academic integrity very seriously. Any suspected violations of academic integrity will be taken seriously and result in the following sanctions:

- A minimum of zero on the assignment OR
- A reduced grade in the course OR
- A failure in the course OR
- An XE which denotes failure due to academic dishonesty on the transcript OR
- Removal from the W. P. Carey School of Business

Additional information on ASU's academic integrity policy may be found at <http://provost.asu.edu/academicintegrity>

## **Honor Code**

The honor code is available here:

<https://my.wpcarey.asu.edu/academic-integrity/upload/Undergraduate-Honor-Code.pdf>

## **Absence Policies**

Participation is necessary to succeed in the course. Excessive absences will not be tolerated and assignments must be turned in by the stated deadline.

## **Religious Accommodations**

Accommodations will be made for students with religious holidays. Below is the calendar of official religious holidays. Each holiday noted with two asterisks denotes an observance for which work is not allowed. For these holidays, students will not be penalized in any way for missing class or assignment. This means that this will not count as an absence in class and they will be granted a makeup assignment or exam, etc.

<https://provost.asu.edu/index.php?q=religious-holiday-calendar>

All requests for accommodation must be submitted by the end of the second week of class.

### **University-Sanctioned Activities**

Accommodations will be made for students who miss class related to university-sanctioned activities according to ACD 304-02.

If you are participating in a university-sanctioned activity, please let your instructor know as early in the course as possible so that accommodations can be made.

### **Threatening Behavior Policy**

The university takes threatening behavior very seriously and these situations will be handled in accordance with the Student Services Manual, <http://www.asu.edu/aad/manuals/ssm/ssm104-02.html>.

### **Disability Accommodations**

If you with an accommodation for a disability, you must be registered with the Disability Resource Center (DRC) and submit the appropriate documentation.

**Information contained within this syllabus (except grading and absence policies) is subject to change.**

ARIZONA STATE UNIVERSITY  
W.P. Carey School of Business

**FIN 303 SLN 13969 Preliminary Course Schedule**

Wk	Class	Day	Date	Assignments	Topic	Reading
1	1	T	Jan 12		Course Overview & Logistics	BD Ch. 1
1	2	Th	Jan 14		Intro Financial Decision Making	BD Ch.3
2	3	T	Jan 19	Excel 1 due	Time Value of Money	BD Ch.4
2	4	Th	Jan 21		Interest Rates and Compounding	BD Ch.5
3	5	T	Jan 26	PS1 due	PS 1 Review	
3	6	Th	Jan 28	Excel 2 due	Valuing Stocks & Bonds	BD Ch. 8 and 9
4	7	T	Feb 2		Alternatives to NPV	BD Ch.6
4	8	Th	Feb 4	PS2 due	PS 2 Review	
5	9	T	Feb 9		Exam Q&A	
5	10	Th	Feb 11		<b>Midterm I</b>	
6	11	T	Feb 16		Intro to Capital Budgeting	BD Ch.7
6	12	Th	Feb 18	Excel 3 due	Capital Budgeting	
7	13	T	Feb 23		Risk, Return, and Portfolio Theory	BD Ch.10 & 11
7	14	Th	Feb 25	PS3 due	PS 3 Review	
8	15	T	Mar 1		CAPM	BD Ch.12
8	16	Th	Mar 3	Case 1 due	Market Efficiency & Alternatives	BD Ch.13
Spring Break: March 6-13						
9	17	T	Mar 15		Market Efficiency & Alternatives	BD Ch.13
9	18	Th	Mar 17		Capital Budgeting with Risk	
10	19	T	Mar 22	PS4 due	PS 4 Review	
10	20	Th	Mar 24		Capital Structure	BD Ch. 14
11	21	T	Mar 29		<b>Midterm II</b>	
11	22	Th	Mar 31		Tax Shields and Cost of Capital	BD Ch. 15
12	23	T	Apr 5		Financing & Valuation	BD Ch. 18
12	24	Th	Apr 7		Financial Distress	BD Ch. 16
13	25	T	Apr 12	Case2 due	Dividend Policy	BD Ch. 17
13	26	Th	Apr 14		Intro to Financial Options	BD Ch. 20
14	27	T	Apr 19		Understanding Options	BD Ch. 21
14	28	Th	Apr 21		Real Options	BD Ch. 22
15	29	T	Apr 26	PS5 due	PS5 Review	
15	30	Th	Apr 28		Course Review	
Final Exam: Thursday, May 5 12:10 to 2:00 P.M. Room TBA						

Drop/Add Deadline: 1/17/2016

Course Withdrawal Deadline: 4/3/2016

Complete Withdrawal Deadline: 4/29/2016



ARIZONA STATE UNIVERSITY  
GENERAL STUDIES COURSE PROPOSAL COVER FORM

**Course information:**

Copy and paste **current** course information from Class Search/Course Catalog.

Academic Unit	<u>W. P. Carey School of Business</u>	Department	<u>Agribusiness (Morrison School of Agribusiness)</u>
Subject	<u>AGB</u>	Number	<u>360</u>
		Title	<u>Agribusiness Statistics</u>
			Units: <u>3</u>
Is this a cross-listed course? If yes, please identify course(s)	<u>No</u>		
Is this a shared course? Course description:	<u>No</u>	If so, list all academic units offering this course _____	

**Requested designation:** Mathematical Studies-CS

Note- a **separate** proposal is required for each designation requested

**Eligibility:**

Permanent numbered courses must have completed the university's review and approval process.  
For the rules governing approval of omnibus courses, contact the General Studies Program Office at (480) 965-0739.

**Area(s) proposed course will serve:**

A single course may be proposed for more than one core or awareness area. A course may satisfy a core area requirement and more than one awareness area requirements concurrently, but may not satisfy requirements in two core areas simultaneously, even if approved for those areas. With departmental consent, an approved General Studies course may be counted toward both the General Studies requirement and the major program of study.

**Checklists for general studies designations:**

Complete and attach the appropriate checklist

- [Literacy and Critical Inquiry core courses \(L\)](#)
- [Mathematics core courses \(MA\)](#)
- [Computer/statistics/quantitative applications core courses \(CS\)](#)
- [Humanities, Fine Arts and Design core courses \(HU\)](#)
- [Social and Behavioral Sciences core courses \(SB\)](#)
- [Natural Sciences core courses \(SQ/SG\)](#)
- [Global Awareness courses \(G\)](#)
- [Historical Awareness courses \(H\)](#)
- [Cultural Diversity in the United States courses \(C\)](#)

**A complete proposal should include:**

- Signed General Studies Program Course Proposal Cover Form
- Criteria Checklist for the area
- Course Syllabus
- Table of Contents from the textbook and list of required readings/books

**Contact information:**

Name	<u>Mark Manfredo</u>	Phone	<u>480.727.1040</u>
Mail code	_____	E-mail:	<u>manfredo@asu.edu</u>

**Department Chair/Director approval: (Required)**

Chair/Director name (Typed):	<u>Mark Manfredo</u>	Date:	<u>2/3/14</u>
Chair/Director (Signature):	<u></u>		

## Arizona State University Criteria Checklist for

### **MATHEMATICAL STUDIES [CS]**

#### **Rationale and Objectives**

The **Mathematical Studies** requirement is intended to ensure that students have skill in basic mathematics, can use mathematical analysis in their chosen fields, and can understand how computers can make mathematical analysis more powerful and efficient. The **Mathematical Studies** requirement is completed by satisfying both the **Mathematics [MA]** requirement and the **Computer/Statistics/Quantitative Applications [CS]** requirement explained below.

The **Mathematics [MA]** requirement, which ensures the acquisition of essential skill in basic mathematics, requires the student to complete a course in College Mathematics, College Algebra, or Precalculus, or demonstrate a higher level of skill by completing a mathematics course for which any of the first three courses in a prerequisite.

The **Computer/Statistics/Quantitative Applications [CS]** requirement, which ensures skill in real world problem solving and analysis, requires the student to complete a course that uses some combination of computers, statistics, and mathematics.

Approved: Feb. 2000

Proposer: Please complete the following section and attach appropriate documentation.

<b>ASU--[CS] CRITERIA</b>			
<b>A COMPUTER/STATISTICS/QUANTITATIVE APPLICATIONS [CS] COURSE MUST SATISFY ONE OF THE FOLLOWING CRITERIA: 1, 2, OR 3</b>			
YES	NO		Identify Documentation Submitted
		<b>1. Computer applications*:</b> courses must satisfy both <b>a</b> and <b>b</b> :	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<b>a.</b> Course involves the use of computer programming languages or software programs for quantitative analysis, modeling, simulation, animation, or statistics.	Please see Syllabus; Course Outline; and Sample Problems
		<b>b.</b> Course requires students to analyze and implement procedures that are applicable to at least one of the following problem domains ( <b>check those applicable</b> ):	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<b>i.</b> Spreadsheet analysis, systems analysis and design, and decision support systems.	Please see Syllabus; Course Outline; and Sample Problems
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<b>ii.</b> Graphic/artistic design using computers.	
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<b>iii.</b> Music design using computer software.	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<b>iv.</b> Modeling, making extensive use of computer simulation.	Please see Syllabus; Course Outline; and Sample Problems
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<b>v.</b> Statistics studies stressing the use of computer software.	Please see Syllabus; Course Outline; and Sample Problems
<p>*The <b>computer applications</b> requirement <b>cannot</b> be satisfied by a course, the content of which is restricted primarily to word processing or report preparation skills; learning a computer language or a computer software package; or the study of the social impact of computers. Courses that emphasize the use of a computer software package or the learning of a computer programming language are acceptable, provided that students are required to understand, at an appropriate level, <b>the theoretical principles embodied in the operation of the software and are required to construct, test, and implement procedures that use the software to accomplish tasks in the applicable problem domains.</b></p>			
		<b>2. Statistical applications:</b> courses must satisfy both <b>a</b> and <b>b</b> .	
<input type="checkbox"/>	<input type="checkbox"/>	<b>a.</b> Course has a minimum mathematical prerequisite of College Mathematics, College Algebra, or Precalculus, or a course already approved as satisfying the MA requirement.	
<input type="checkbox"/>	<input type="checkbox"/>	<b>b.</b> The course must be focused principally on developing knowledge in statistical inference and include coverage of all of the following:	

<b>ASU--[CS] CRITERIA</b>			
YES	NO		Identify Documentation Submitted
<input type="checkbox"/>	<input type="checkbox"/>	<b>i.</b> Design of a statistical study.	
<input type="checkbox"/>	<input type="checkbox"/>	<b>ii.</b> Summarization and interpretation of data.	
<input type="checkbox"/>	<input type="checkbox"/>	<b>iii.</b> Methods of sampling.	
<input type="checkbox"/>	<input type="checkbox"/>	<b>iv.</b> Standard probability models.	
<input type="checkbox"/>	<input type="checkbox"/>	<b>v.</b> Statistical estimation	
<input type="checkbox"/>	<input type="checkbox"/>	<b>vi.</b> Hypothesis testing.	
<input type="checkbox"/>	<input type="checkbox"/>	<b>vii.</b> Regression or correlation analysis.	
		<b>3. Quantitative applications: courses must satisfy both a and b.</b>	
<input type="checkbox"/>	<input type="checkbox"/>	<b>a.</b> Course has a minimum mathematical prerequisite of College Mathematics, College Algebra, or Precalculus, or a course already approved as satisfying the MA requirement.	
		<b>b.</b> The course must be focused principally on the use of mathematical models in quantitative analysis and design making. Examples of such models are:	
<input type="checkbox"/>	<input type="checkbox"/>	<b>i.</b> Linear programming.	
<input type="checkbox"/>	<input type="checkbox"/>	<b>ii.</b> Goal programming.	
<input type="checkbox"/>	<input type="checkbox"/>	<b>iii.</b> Integer programming.	

<b>ASU--[CS] CRITERIA</b>			
<b>YES</b>	<b>NO</b>		<b>Identify Documentation Submitted</b>
<input type="checkbox"/>	<input type="checkbox"/>	<b>iv.</b> Inventory models.	
<input type="checkbox"/>	<input type="checkbox"/>	<b>v.</b> Decision theory.	
<input type="checkbox"/>	<input type="checkbox"/>	<b>vi.</b> Simulation and Monte Carlo methods.	
<input type="checkbox"/>	<input type="checkbox"/>	<b>vii.</b> Other (explanation must be attached)	

Course Prefix	Number	Title	Designation
			CS

Explain in detail which student activities correspond to the **specific** designation criteria.  
Please use the following organizer to explain how the criteria are being met.

Criteria (from checksheet)	How course meets spirit (contextualize specific examples in next column)	Please provide detailed evidence of how course meets criteria (i.e., where in syllabus)
1a. - Course involves the use of computer programming languages or software programs for quantitative analysis, modeling, simulation, animation, or statistics	This course implements extensive use of Microsoft Excel as a tool in statistical analysis	See learning objectives 2 to 3 in syllabus  See "course structure" in syllabus  See section entitled "Excel Guide" for each chapter used in textbook.  See attached sample assignments.
1b.i. Spreadsheet analysis, systems analysis and design, and decision support systems	Managers in the agribusiness and resource industries must be adept at organizing and analyzing data. The use of statistical analysis using Excel and Excel add-in software is the primary tool available to managers. The flexibility of spreadsheets go beyond programming such that students can conceptualize and model various scenarios in Excel, conduct advanced statistical analysis, and easily incorporate sensitivity analysis as well as data exploration and manipulation.	See learning objectives 2 to 3 in syllabus  See "course structure" in syllabus  See section entitled "Excel Guide" for each chapter used in textbook. In particular note Chapters 1, 2, 3, and 15  See attached sample assignments, in particular assignments 1 and 5.
1b.iv. Modeling, making extensive use of computer simulation.  1b.v. Statistics studies stressing use of computer software	1b.iv. Excel is the primary tool used for statistical modeling in the agribusiness industry. Numerous add-in packages are also available to enhance decision making, including @RISK which allows cells in Excel to be stochastic and allows the modeler to designate stochastic inputs and outputs in order to make probabilistic assessments.  1b.v. - Throughout the course, emphasis is placed on statistical	See learning objectives 2 to 3 in syllabus  See "course structure" in syllabus  See section entitled "Excel Guide" for each chapter used in textbook. In particular note chapters 7 through 13  See attached sample assignments, in particular assignment 5 which covers

	inference, with Microsoft Excel being the primary tool for developing statistics, conducting regression analysis, and hypothesis testing. The data analysis add-in functions in Excel allow students to conduct this analysis in a manner which is consistent with the tools available to all firms (e.g., Excel) without reliance on statistical software which requires specific programming skills (e.g., R, etc.).	Ordinary Least Squares Regression and hypothesis testing.
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**AGB 360**  
**AGRIBUSINESS STATISTICS**

**SYLLABUS**

**Instructor:** Dr. Troy Schmitz (or other instructor TBA)

**Schedule:** TBA

**Section:** TBA

**Office Hours:** TBA

**Phone:** (480) 727-1566

**E-mail:** [tschmitz@asu.edu](mailto:tschmitz@asu.edu)

**CATALOG DESCRIPTION**

Statistical methods with applications in agribusiness and resource management.

**SPECIFIC LEARNING OBJECTIVES**

- 1) Identify sources of data important for agribusiness and resource managers including data from the U.S. Department of Agriculture (USDA) and Energy Information Administration (EIA).
- 2) Collect and analyze the above data using Microsoft Excel as a primary tool for data organization and analysis.
- 3) Structure and apply various statistical tests using statistical functions and add-ins in Microsoft Excel to make inferences from collected data (e.g., hypothesis testing; testing for statistical differences among individual variables as well as statistical differences among groups)
- 4) Demonstrate the use of linear regression analysis tools in Microsoft Excel, and generate forecasts from this data.

**REQUIRED TEXT**

- Levine, Stephan, Krehbiel, and Berenson "Statistics for Managers using Microsoft Excel." Sixth Edition. Prentice-Hall, New Jersey. ISBN # 0-13-703519-5

### **OPTIONAL READING** (difficulty increases as you move down the list)

- Evans, James D. "Straightforward Statistics." ISBN 0-534-23100-4 (this is a less advanced book used to teach Introduction to Statistics, Psychology 230 on the Tempe campus).
- Lind, Marchal, and Wathen. "Basic Statistics for Business & Economics." McGraw-Hill. Fourth Edition, ISBN 0-07-247104-2 part of 0-07-281982-0.
- Mendenhall, Scheaffer, and Wackerly. "Mathematical Statistics with Applications." Duxbury Press, Boston. University of Florida. ISBN 0-87150-939-3.
- Mittelhammer, Ron C. "Mathematical Statistics for Economics and Business." Springer Press, New York. First Edition, 1996. ISBN 0-387-94587-3.
- Judge, George G., R. Hill, W. Griffiths, H. Lutkepohl, and T.C. Lee. "Introduction to the Theory and Practice of Econometrics." John Wiley and Sons, New York. Second Edition, 1988. ISBN 0-471-62414-4.

### **COURSE STRUCTURE**

The course uses a combination of traditional lecture as well as hands-on learning with Microsoft Excel incorporated in both lecture and in assignments. The ability to use Microsoft Excel for data organization and statistical analysis is a critical skill necessary in today's data intensive environment. Food and agribusiness enterprises, along with business and government entities working in the resource management arena, continuously rely on various statistics for planning and decision making, and Microsoft Excel is one of the primary tools for assembling and analyzing data in the marketplace. Unlike the number of advanced statistical software packages on the market which require advanced programming skills, Microsoft Excel allows students to be intuitive in terms of organizing data and drawing inferences from the data, and is routinely used in most business environments. Excel add-in packages also help leverage the use of Excel. One particular add-in used by several food and agribusinesses is @RISK, which allows the modeler to designate certain variables as stochastic and conduct Monte-Carlo simulation analysis in order to provide "probabilistic assessments" of variables and outputs of interest.

- *Lecture and discussion* - The lectures take the form of traditional written material on the board with templates, problems, and applications displayed using Microsoft Excel. These Excel examples and applications are displayed on the computer screen at the front of the classroom. Students are required to bring the text to each lecture as many of the specific Excel applications and templates are illustrated in the text. If a computer laboratory is not available for the teaching of this course, students are encouraged to bring a laptop.

- *Excel Assignments* - There will be 5 take-home assignments. These assignments are worth 40% of your final grade. All assignments are to be done in Microsoft Excel or with the appropriate Excel add-in. All files are to be labeled as LASTNAME.XLS and submitted via the dropbox function in BlackBoard by 11:59 p.m. on the assigned date.
- *Exams* - The mid-term exam is worth 20% and the final exam is worth 40%. Furthermore, if you receive a higher grade on your final exam than on your mid-term exam, I will weight the final more heavily than 40%. If you did not inform me of an emergency BEFORE the class in which the mid-term or final is given, and you missed the exam, you will receive a grade of 0 on that exam. The exams are non-cumulative, meaning that questions covered on the mid-term will not be on the final. The only thing you are allowed to bring to the exam is a laptop computer (only so you can use Excel...in the case we are not using a computer laboratory for the class), a calculator, and one sheet of 8 1/2 x 11 paper with whatever formulae you wish to write on it. You will not be allowed to bring the text to the exam. Any tables from the appendices that are required for the exam, will be attached at the end of your exam.

## **GRADING**

Excel Assignments:	40%
Mid-term:	20%
Final:	<u>40%</u>
	100%

Final grades will be assigned based on the following traditional scale: 90% to 100% (A); 80 to 89% (B); 70% to 79% (C); 60% to 69% (D); less than 59% (E). +/- grades are at the discretion of the instructor, and are usually used when grades are on the border between letter grades).

## **OTHER**

*Electronic devices* - Please make sure that any cell-phone type gadgets that ring are turned off during class. You can, however, bring in computational devices (such as calculators, laptops, tablets, etc.) However, you are not allowed to access the internet while in class unless we are explicitly using the internet to access data sources, etc.

## **ASU GENERAL INFORMATION**

1. Students are expected to participate in the educational process and not be a disruptive element with regard to the learning of others. Safety, self-discipline and respect for others are necessary elements in the educational processes employed in this course.
2. All students should be familiar with the Student Code of Conduct, which can be found at <https://students.asu.edu/srr/code> .
3. Students are expected to execute all course assignments and activities in accordance with the University's Student Academic Integrity Policy located at <https://provost.asu.edu/index.php?q=academicintegrity> .
4. The Americans with Disabilities Act (ADA) is a Federal antidiscrimination statute that provides comprehensive civil rights protection for persons with disabilities. If you believe you have a disability requiring an accommodation please contact the Disability Resource Center at ASU Polytechnic located in Student Affairs Quad # 4 or call 480-727-1039 / TTY: 480-727-1009. Eligibility and documentation policies are online at <http://www.asu.edu/studentaffairs/ed/drc/>
5. If you have any concerns, anxieties, or requests, please let the instructors know as soon as possible.

## **COURSE OUTLINE AND READING**

The following corresponds to the textbook: Levine, Stephan, Krehbiel, and Berenson "Statistics for Managers using Microsoft Excel." Sixth Edition. Prentice-Hall, New Jersey. ISBN # 0-13-703519-5

### **1 Introduction - Excel Guide**

Checklist for Using Excel  
How to Prepare and Use Data

### **2 Organizing and Visualizing Data**

Categorical variables  
Numerical variables  
Discrete variables  
Continuous variables  
Using PivotTables in Excel to Explore Multidimensional data

### **3 Numerical Descriptive Measures**

Determining the width of a class interval  
The (absolute) frequency distribution  
The relative frequency and percentage distribution  
The Cumulative Distribution  
The Histogram  
The Polygon  
The Cumulative Percentage Polygon  
How to plot the above using Excel  
Mean, Median, Mode  
First Quartile and Third Quartile  
The Geometric Mean and Rate of Return  
The Range  
The Variance and Standard Deviation of a Sample  
The Coefficient of Variation  
Left-Skewed, Right-Skewed, Symmetrical Distributions  
Difference between a population and a sample  
The Population Mean  
The Population Variance  
The Population Standard Deviation  
Using Statistical Functions in Excel  
Inserting and using the Excel Statistics add-on Procedures

## **ASSIGNMENT 1**

## **4.1 Basic Probability Concepts**

Three approaches to the subject of probability  
Probability of occurrence  
Event, simple event, joint event, complement, sample space  
Contingency Tables  
Venn Diagrams  
Simple (marginal) probability vs. Joint probability  
Mutually exclusive and collectively exhaustive  
General addition rule

## **4.2 Conditional Probability**

Computing conditional probabilities  
Statistical independence  
General multiplication rule  
Multiplication rule for independent events

## **4.5 Counting Rules**

Counting Rule 1 - repeated identical outcomes  
Counting Rule 2 - repeated non-identical outcomes  
Counting Rule 3 - number of ways to arrange things in order  
Counting Rule 4 - number of ways to arrange a subset in order  
Counting Rule 5 - number of ways to choose a subset when order is irrelevant

## **5 Discrete Probability Distributions**

Combinations  
Binomial Probability Distribution  
Computing Binomial Probabilities using the  $P(X > a) = 1 - P(X \leq a)$  trick  
Poisson Distribution  
How to generate random numbers using various distributions in Excel  
How to plot various distributions in Excel

## **ASSIGNMENT 2**

### **6.1 Continuous Probability Distributions**

### **6.2 The Normal Distribution (Bell Curve)**

The Normal Probability Density Function  
The Transformation Formula - Finding a Z-value using the Normal Table  
The Standardized Normal Probability Density Function  
Finding an X-value using the Normal Table  
Finding an X-value using built-in Excel functions

## **7.1 Sampling Distribution of the Mean**

Standard Error of the Mean  
Finding Z for the Sampling Distribution of the Mean  
Finding X for the Sampling Distribution of the Mean  
Central Limit Theorem  
Empirical Rule  
Using Excel to generate random sampling distributions

## **ASSIGNMENT 3**

### **8.1 Confidence Interval Estimation for the Mean (Known Variance)**

Four Steps for finding any Confidence Interval (from notes, not in text)  
Confidence Interval for a Mean with a known standard deviation

### **8.2 Confidence Interval Estimation for the Mean (Unknown Variance)**

Properties of the t Distribution  
The Concept of Degrees of Freedom  
Confidence Interval for a Mean with an unknown standard deviation  
Generating confidence intervals using the built-in Excel t-value function

## **MIDTERM REVIEW followed by MIDTERM EXAM**

### **7.3 Sampling Distribution of the Proportion**

The Sample Proportion  
Standard error of the proportion  
Difference between the sample proportion and population proportion

### **8.3 Confidence Interval for the Proportion**

Confidence Interval Estimate for the Proportion

### **8.4 Determining Sample Size**

Sample Size Determination for the mean  
Sample size determination for the proportion

## **9 One-Sample Hypothesis Testing**

The level of significance and confidence coefficient  
Z Test of Hypothesis for the Mean for Known Variance

One-Tail Tests (critical value and p-value approach)  
Test of Hypothesis for the Mean for Unknown Variance  
Z Test of Hypothesis for the Proportion  
Using Excel for Hypothesis testing

### **10.1-10.4 Two-Sample Tests**

Pooled-Variance t test for the Difference Between Two Means  
Paired t Test for the Mean Difference  
Z Test for the difference between two proportions  
F test for testing the equality of two variances  
Finding lower-tail critical values from the F distribution  
Plotting F-distributions and obtaining critical values using Excel

### **11 One-Way Analysis of Variance (ANOVA)**

Total variation in one-way ANOVA (SST)  
Among group variation in one-way ANOVA (SSA)  
Within-group variation in one-way ANOVA (SSW)  
Computing the mean squares in a one-way ANOVA  
One-way ANOVA F-test statistic  
Using Excel Statistics add-on to run ANOVA models

## **ASSIGNMENT 4**

### **12 Chi-Square Tests**

Chi-square test for the difference between two proportions  
Computing the estimated overall proportion  
Chi-square test for differences among more than two proportions  
Computing the estimated overall proportion for c groups  
Using Excel Statistics add-on to run Chi-Square tests

### **3.5 The Covariance and the Coefficient of Correlation**

The Sample Covariance between X and Y  
The Sample Coefficient of Correlation  
Using Excel Statistics add-on to perform correlation analysis

### **13 Simple Linear Regression**

Simple linear regression equation and prediction line  
Computational formula for the slope  $b_1$

Computational formula for the Y intercept  $b_0$   
SST = SSR + SSE  
Total sum of squares (SST)  
Regression sum of squares (SSR)  
Error sum of squares (SSE)  
Coefficient of determination  
Computational formulae for SST, SSR, and SSE  
Using Excel REGRESS add-on to perform linear regressions  
Interpreting linear regressions generated by Excel  
Standard error of the estimate  
Testing a hypothesis for a population slope using the t-test  
Testing a hypothesis for a population slope using the F-test  
Confidence interval estimate of the slope  
Testing for the existence of correlation  
Confidence interval estimate for the mean of Y  
Prediction interval for an individual response Y

## **ASSIGNMENT 5**

## **FINAL EXAM REVIEW AND FINAL EXAM**

## Assignment #1 (Questions)

This assignment has two purposes. The first is to learn how to calculate and interpret various statistics (either with or without the use of a computer). The second is to make sure that you know how to use Microsoft Excel to perform the data analysis. Please, do not try to do this by hand! You should know how to perform this analysis for the exams on smaller data sets, using a calculator, but I want this assignment done on the computer.

The data used for this assignment is provided on the course web site immediately below this link. You import the data into an Excel spreadsheet and then convert the text to columns first. Once you have done that, there are three questions, each with subparts.

### **Question 1**

Form the frequency and percentage distributions (in an Excel Table) and plot the percentage polygon and the cumulative percentage distribution polygons (in an Excel Chart) associated with the data presented in the COST column and the CALORIES columns only. You must choose the bin (i.e. the number of categories and the gaps between each category) appropriately for each of the two columns of data. You are not allowed to use the autoplot feature in Excel, but you are allowed to use the Data Analysis Toolpack to assist you in creating the BIN Values. The charts should be contained on a worksheet that is separate from the tables that you create, but is still in the same workbook.

For question 1, DO NOT TRY TO USE THE FREQUENCY FUNCTION IN EXCEL. I haven't even figured out exactly why it works. Your best bet is to manually set up your bin numbers as shown in the book, and then to use the function TOOLS | DATA ANALYSIS | HISTOGRAM which will automatically graph and calculate the percentages for you. Note: if DATA ANALYSIS does not appear on your TOOLS menu you must first go to TOOLS | ADDINS and check the box that says "DATA ANALYSIS TOOLPACK". Once you have done that, the DATA ANALYSIS option should appear under the TOOLS.

When plotting your charts, be sure to change the format so that the numbers on the X-axis line up with the midpoint of the individual data point plot instead of at the endpoints.

### **Question 2**

On a separate worksheet, form a contingency table, cross-classifying the types of ready-to-eat cereal (high fiber, moderate fiber, low fiber) with the level of calories per serving (below 155, at or above 155). For question 2, you need to use the contingency table wizard in Excel. You do this by selecting DATA | PIVOT TABLE REPORT from the Excel menu. But before you do that, you must manually (or using the IF function if you know how) create a new column that contains something like "bl155" for those data points for which the calories are below 155, and something like "gt155" for those data points for which the calories are above 155. Once you have created this new column, then you are ready to create the contingency table using the pivot table function. I will do

examples using the contingency table function during lecture 2, so be sure to show up if you want a detailed explanation. If you miss lecture 2, you can still go through the Excel help engines and follow the instructions on creating contingency tables.

Note: the process for creating contingency tables is significantly different depending upon which version of Excel you have. In class, I will show you how to do it using Excel 2000. If you have another version at home, you are basically on your own.

### **Question 3**

On four separate worksheets (within the same workbook), obtain various descriptive statistics for each of the four categories: COST, WEIGHT, CALORIES, and SUGAR, broken down by type of cereal (i.e. H, M, or L) fiber. When finished, you should have four tables of summary statistics, each with three different groups (one for each type of cereal). **FOR THIS PART, YOU ARE NOT ALLOWED TO USE THE DATA ANALYSIS TOOLPACK, PIVOT TABLES, OR THE MEAN, STDEV AND VAR FORMULAS.** You must form these statistics using your own summation formulas.

You should at least include the following summary statistics for each sub-category:

1. Number of observations (N)
2. Mean
3. Sum of the Xs squared
4. Sample Variance
5. Sample Standard Deviation
6. Coefficient of Variation
7. Mode
8. Median
9. Maximum
10. Minimum

## Assignment #2 (Questions)

Below are the specific instructions for assignment #2. Please use Excel for all calculations and set up, and use Excel statistical functions where possible. As shown in class, reference parameters in calculations as this will make your work much easier, and all for sensitivity analysis.

### Question 1

In a certain study, 1000 individuals in a randomly selected sample were asked whether they were planning to buy a car in the next 12 months. A year later, the same people were interviewed again to find out whether they actually bought a new car. The response to both interviews is cross-tabulated as follows:

	Buyers	Nonbuyers	Totals
Planned to Buy	150	50	200
Did not Plan to Buy	50	750	800
Totals	200	800	1000

- (a) Give an example of a simple event.
- (b) Give an example of a joint event.
- (c) What is the complement of "planned to buy"?
- (d) What is the probability that in the last year, a consumer planned to buy and actually bought a car?
- (e) What is the probability that in the last year, a consumer planned to buy and actually did not buy a car?
- (f) What is the probability that in the last year, a consumer did not plan to buy, and actually did not buy a car?
- (g) If an individual is selected at random, what is the chance that he or she planned to buy a car or actually bought a car?
- (h) If an individual is selected at random, what is the chance that he or she did not plan to buy a car or did not actually buy a car?
- (i) If an individual is selected at random, what is the chance that he or she planned to buy a car or did not plan to buy a car?

- (j) If the respondent planned to buy a car, what is the chance that he or she actually bought one?
- (k) If the respondent did not plan to buy a car, what is the chance that he or she did not buy a car?
- (l) Are planning to buy a car and actually buying one statistically independent? Explain.

### **Question 2**

A deck of cards consists of 52 cards. The different types of cards are {2,3,4,5,6,7,8,9,10,Jack,Queen,King,Ace}. Each type of card has for suits {clubs, diamonds, hearts, spades}. In the game of blackjack, all cards with a number on them count as that number, the picture cards (jack, queen, king) count as 10 points, and the ace counts as either 1 or 11 points. You can draw as many cards as you want, but if you add up the points for all of your cards and you have more than 21, you lose your money. A blackjack is achieved if you get 21 on only two cards.

- (a) If a new deck has been shuffled (all 52 cards) and you are given 2 cards from the deck without replacement, what is the probability that the first card is an ace and the second card is a jack?
- (b) If a new deck has been shuffled (all 52 cards) and you are given 2 cards from the deck without replacement, what is the probability of getting blackjack?
- (c) Suppose from a new deck of 52 cards, you are given two cards face-up, and the dealer is given one card face-up and the other face-down (i.e. you can't see one of the dealer's two cards). Further, suppose that the dealer's up card (the one that is showing on the table) is an ace and you have a 5 and a 10. What is the probability that the dealer has blackjack?
- (d) Suppose that half of the deck has already been drawn and that you saw all 26 cards that went by. Further, suppose that (as part of the first 26 cards that were drawn from the deck) you counted the cards and remember seeing 1 Ace, 1 King, 1 Queen, no Jacks, and no Tens and you remember seeing that all other cards were between 2 and 9. What is your chance of getting blackjack on the next two cards when drawing from the 26 cards that remain in the deck?

### **Question 3**

The probability that a salesperson will sell a magazine subscription to someone who has been randomly selected from the telephone directory is 0.20. If the salesperson calls 10 individuals this evening, what is the probability that:

- (a) No subscriptions will be sold?
- (b) Exactly two subscriptions will be sold?

(c) At least two subscriptions will be sold?

**Question 4**

An auditor for the IRS is selecting a sample of 6 tax returns filed by professors. If 2 or more of these indicate "improper" deductions, the entire group (population) of 100 tax returns filed by professors will be audited. What is the probability that the entire group will be audited if the true number of improper returns in the population is 25?

### Question 5

On the game show "The Price is Right" there is a game called Barker's markers. In this game, a prize is displayed. 4 possible price tags are displayed on a board. You must choose the price tag (from among the 4 shown on the board) that you think matches the actual price of the prize. Once you have chosen a price, Bob Barker removes 2 of the 3 remaining price tags that are incorrect from the board. Hence, you are left with 2 possible price tags (the one you have chosen and another one). Bob now asks you if you want to switch or if you want to keep the price that you originally chose.

On a separate piece of paper, please draw the two-stage decision tree that represents all of the possible choices in this game. Using the tree that you have constructed, determine the probability of winning if you switch vs. the probability of winning if you don't switch. Would you switch?

### Question 6

Suppose you are the manager of a supermarket that purchases large quantities of white bread. The bread can be purchased for \$0.75 per loaf and sold for \$1.10 per loaf. Any loaves not sold by the end of the week can be sold to a local thrift shop for 40 cents per loaf. Based on past demand, the probability distribution of various levels of demand is as follows:

Demand (Loaves)	Probability
6,000	.10
8,000	.50
10,000	.30
12,000	.10

- Set up the payoff table indicating the events and alternative courses of action under the assumption that you are limited to purchasing loaves in lots of 6,000, 8,000, 10,000, or 12,000 loaves.
- Set up the decision tree.
- Compute the expected monetary value associated with purchasing 6,000, 8,000, 10,000, and 12,000 loaves.
- Compute the expected opportunity loss associated with purchasing 6,000, 8,000, 10,000, and 12,000 loaves.
- On the basis of the results of (c) and (d) how many loaves would you purchase and why?

- (f) Compute the coefficient of variation for each purchase level.
- (g) Compute the return to risk ratio for each purchase level.
- (h) On the basis of (f) and (g) which action would you take and why?

## Assignment #3 (Questions)

Below are the specific instructions for assignment #3. Please use Excel for all calculations and set up, and use Excel statistical functions where possible. As shown in class, reference parameters in calculations as this will make your work much easier, and all for sensitivity analysis.

### Question 1

Suppose you are interested in estimating the actual amount of Pepsi that is placed in 2-liter bottles. Pepsi-Co has informed you that the standard deviation for 2-liter bottles is 0.05 liters, but does not provide you with the population mean. A random sample of 100 2-liter bottles purchased by your store indicates a sample mean of 1.99 liters.

- (a) Set up a 95% confidence interval estimate of the true population mean quantity of Pepsi in each bottle.
- (b) Does the population (of Pepsi bottles) have to be normally distributed in order to find the confidence interval? Explain.
- (c) Explain why an observed value of 2.02 liters would not be unusual, even though it is outside the confidence interval you calculated.
- (d) If your store wants to estimate the mean quantity of Pepsi fill to within an error of  $\pm 0.01$  liters with 95% confidence, what sample size is needed?
- (e) Construct a statistical test at the 95% level of significance to test the hypothesis that the population mean equals 2 liters vs. the alternative hypothesis that the population mean does not equal 2 liters.
- (f) What is the p-value associated with the statistical test in part (e)?

### Question 2

The personnel department of a LARGE corporation would like to estimate the family dental expenses of its employees to determine the feasibility of providing a dental insurance plan. A random sample of 10 employees reveals the following family dental expenses (in dollars) for the preceding year:

**110, 362, 246, 85, 510, 208, 173, 425, 316, 179**

- (a) Set up a 99% confidence interval estimate of the average family dental expenses for all employees of this corporation.
- (b) What assumption about the population distribution must be made in (a)?

- (c) Construct a statistical test at the 99% level of significance to test the hypothesis that the mean family dental expenses for all employees equals \$300 vs. the alternative hypothesis that the mean dental expenses does not equal \$300.
- (d) Construct a statistical test at the 99% level of significance to test the hypothesis that the mean family dental expenses for all employees is less than or equal to \$300 vs. the alternative hypothesis that the mean dental expenses are MORE THAN \$300.

## Assignment 4 (Questions)

Below are the specific instructions for assignment #2. Please use Excel for all calculations and set up, and use Excel statistical functions where possible. As shown in class, reference parameters in calculations as this will make your work much easier, and all for sensitivity analysis.

Include a printout for the chi-square and ANOVA tables from Excel, but you must explain which formulas you used. You will get no credit for just giving the answer without supporting your work.

### Question 1

Suppose you are a manager of a LARGE orange grove and that you have been using the same rootstock for several years. You decide to test out a new rootstock, so in 1990, you set aside a large plot of land and plant a new rootstock. It is now 1999 and you want to determine if there is a statistically significant difference between the yield from trees with the new rootstock vs. trees with the old rootstock. Suppose you select a sample of 4 trees that use the old rootstock and 5 trees that use the new rootstock and you compile the following data set containing the number of oranges produced by each tree:

Old Rootstock Number of Oranges	New Rootstock Number of Oranges
195	210
205	215
200	200
200	190
	220

- Calculate the mean and the variance for the number of oranges produced with the old rootstock.
- Calculate the mean and the variance for the number of oranges produced with the new rootstock.
- Using the answers to part (a) and (b), perform a statistical test at the 95% level of significance to determine whether trees with the new rootstock **OUTPERFORM** trees with the old rootstock (in terms of the number of oranges per tree). Given the results of this test, would you switch to the new rootstock in the future?

- (d) Using the answers to part (a) and (b), perform a statistical test at the 95% level of significance to test the hypothesis that trees with the new rootstock exhibit a DIFFERENT variance (in terms of number of oranges) than trees with the old rootstock. Does this result change your answer to part (c)? Why or why not?

### **Question 2**

The personnel department of a corporation with 100 employees would like to estimate the family dental expenses of its employees to determine the feasibility of providing a dental insurance plan. A random sample of 15 employees reveals the following family dental expenses (in dollars) for the preceding year:

**110, 362, 246, 85, 510, 208, 173, 425, 316, 179, 310, 320, 295, 290, 275**

- (a) Suppose that you are interested only in the PROPORTION of dental expenses that are above \$300. Set up a 95% confidence interval estimate of the mean PROPORTION of dental plans that cost above \$300.
- (b) Construct a statistical test at the 95% level of significance to test the hypothesis that the mean PROPORTION of dental plans that cost above \$300 equals 0.5 vs. the alternative hypothesis that the mean PROPORTION of dental plans that cost above \$300 does not equal 0.5.
- (c) Using the sample proportion calculated in parts (a-b) as your best guess for the population proportion, find the sample size that would be required to obtain a 95% confidence interval for the population proportion, if the desired level error level is +0.1.

### **Question 3**

Suppose that you invent a new product called "Arizona Cactus Juice". Before you begin mass-production of this product, you construct a taste-test survey to determine the demand for cactus juice in 3 different states, Arizona, New Mexico, and Utah. Assume that you have a limited budget and a short amount of time, so that you can ask only one question. The question is "Would you be willing to buy this product in a grocery store at a reasonable price?" Suppose that 40 of the 100 respondents from Arizona answered "yes", 16 of the 50 respondents from New Mexico answered "yes", and 30 of the 80 respondents from Utah answered "yes".

- (a) Create a contingency table that contains the number of respondents that answered "yes" or "no" in each of the three states.
- (b) Describe the statistical test that you would use to determine if the demand for cactus juice in at least one state is different than the others. What would the critical value be if you performed this test at a 95% significance level?

- (c) Using the pooled proportion across the three states, compute the table of expected frequencies that corresponds to the table of observed frequencies.
- (d) Using the answer to part (a) and part (c), perform the statistical test outlined in part (b) on this data. Is there any evidence that the demand for cactus juice in at least one state is different than the others? How would you allocate your future advertising budget among these three states?

#### **Question 4**

A snack food company that supplies stores in a metropolitan area with "healthy" snack products was interested in improving the shelf life of its tortilla chips product. Six batches (each batch containing 1 pound) of the product were made under each of four different formulations. The batches were then kept under the same conditions of storage. Product condition was checked each day for freshness. The shelf life in days until the product was deemed to be lacking in freshness was as follows:

<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>
94	88	76	82
100	89	69	80
90	88	76	82
97	83	79	78
101	79	80	89
90	82	72	80

- (a) At the 95% level of significance, completely analyze the data to determine whether there is evidence of a difference in the average shelf life among the formulations.
- (b) If appropriate, determine which groups differ in average shelf life.
- (c) What conclusions about the shelf life of the formulations can the manager of the snack foods company reach? Explain.

## Assignment 5 (Questions)

Question 1 requires a simple linear regression. YOU MUST USE THE EXCEL REGRESSION ROUTINE TO ANSWER Question 1. The calculations for this question should be done on one spreadsheet (using formulae similar to the ones in Lab 11) and should be made to fit one printed page.

Scenario - you are the marketing manager of Fry's and would like to determine the way in which shelf space and product placement affect pet food sales. A random sample of 12 equal-sized stores is selected and you tabulate the total size of the pet food display in square feet. This is your first explanatory variable and it is called "shelf space". In addition, you tabulate the results of a second explanatory variable called "location". The location variable refers to whether or not the pet food display is in the FRONT or BACK of the store. The results from the 12 stores are provided below:

STORE	WEEKLY SALES (\$1000s)	SHELF SPACE (Square Feet)	LOCATION (Front or Back)
1	1.6	5	Back
2	2.2	5	Front
3	1.4	5	Back
4	1.9	10	Back
5	2.4	10	Back
6	2.6	10	Front
7	2.3	15	Back
8	2.7	15	Back
9	2.8	15	Front
10	2.6	20	Back
11	2.9	20	Back
12	3.1	20	Front

### Question 1

- State the simple linear regression model that would be used to predict weekly sales as a function of shelf space only.
- Use Excel to find the Ordinary Least Squares (OLS) intercept ( $b_0$ ) and slope ( $b_1$ ) parameters associated with this regression.
- Interpret the meaning of parameters  $b_0$  and  $b_1$ .
- Predict average weekly sales of pet food for a store with 8 feet of shelf space.
- What percentage of the variability in weekly sales can be attributed to shelf space?
- Test the existence of a significant relationship between shelf space and weekly sales at a 90% level of significance. Does increased shelf space increase sales, decrease sales, or neither?
- Perform a residual analysis to detect evidence of autocorrelation. Given these results, is the simple linear regression valid?
- Find a 95% confidence interval estimate of the slope  $\beta_1$ .
- Find a 90% prediction interval for an individual store.

# Statistics for Managers

## Using Microsoft Excel

SIXTH EDITION

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W. P. Carey School of Business  
Morrison School of Agribusiness

AGB 435: Commodity Futures and Options Markets  
Fall 2017 – Session B

Instructor: Dr. Mark Manfredo

SLN: 75954 (ASU Online)  
SLN: 75955 (iCourse)

## Syllabus

### Course Number

AGB 435

### Course Title

Commodity Futures and Options Markets

### Credits

3 Credit Hours

### Prerequisites

AGB 250 or ECN 212 or equivalent microeconomics course. Of course the most important prerequisite is an open mind and desire to learn!

### Faculty

**Name:** Mark R. Manfredo, Ph.D.

**Office:** 235D Santan Hall; ASU Polytechnic Campus

**Office phone:** (480) 727-1040

**Email address:** [manfredo@asu.edu](mailto:manfredo@asu.edu)

## Office hours:

*In Person Office Hours* - For those students taking the course as an iCourse (on campus students), I will conduct formal office hours (in my office) on **Tuesdays from 4 p.m. to 5 p.m.** Please note that I may need to postpone these office hours from time to time given meetings and other commitments. **Therefore, the best way to guarantee a face-to-face meeting in my office is to make an appointment (preferred).** Appointments can be made by email. I highly encourage students that are taking the course via iCourse to meet with me at least one time during the semester.

*Pre-Exam Study Sessions* - Prior to each exam, I will set up some designated office hours to serve as a "Pre-Exam Study Session". I will announce the time and place of these sessions. As well, for students taking the course via ASU Online, I will "attempt" to simulate these pre-exam study sessions via Adobe Connect or other platform.

*Additional Technologies for Office Hours* - For those students taking the course through ASU Online, or for those students that cannot meet me in person, I can be available through Skype, Apple Facetime, or Adobe Connect or via a phone conversation. Please email me to make an appointment for Skype, Facetime, Adobe Connect, or phone meeting.

## Catalog Description

Provides an understanding of how to use futures and options markets in a risk management and pricing context, especially as it pertains to the marketing and procurement of agricultural commodities by grain and livestock merchandisers, food manufacturers, and producers/distributors/consumers of natural resources.

## Course Learning Outcomes

Each of the weekly units have defined and specific learning objectives that achieve these general and encompassing learning outcomes for the course. Therefore, at the completion of this course, students will be able to:

Describe the role that futures and options markets play in price discovery and risk management with special emphasis on agricultural products.

Demonstrate a working knowledge of futures and options market mechanics including the calculation of profits and losses from speculative and hedging transactions as well as interpretation of price information.

## W. P. Carey School of Business Learning Goals

The Undergraduate Program of the W.P. Carey School of Business has established the following learning goals for its graduates:

### 1. Critical Thinking

2. Communication
- 3. Discipline Specific Knowledge**
4. Ethical Awareness and Reasoning
5. Global Awareness

Items in **bold** have significant coverage in this course.

## Textbook and Materials

**Textbook** - I have found over years of teaching this course that there is no one textbook that fits this course perfectly. This is particularly true given the online 7.5 week format. The world of futures and options markets is expansive, so we need to focus. Therefore, this class relies heavily on the videos and PowerPoint presentations presented in the Learning Materials. However, I do provide some required reading materials that provide an excellent overview of the sections we will cover, or, provide supplemental material and/or problems. The following readings are available free of charge from the CME Group website. The links are provided below, as well as in the textbook section on BlackBoard.

A Traders Guide to Futures: Thought Leadership with a Global Perspective (CME Group): <http://www.cmegroup.com/education/files/a-traders-guide-to-futures.pdf>

CME Group Options on Futures:  
<http://www.cmegroup.com/education/files/options-on-futures-brochure.pdf>

Self-Study Guide to Hedging with Grain and Oilseed Futures and Options (CME Group): [http://www.cmegroup.com/trading/agricultural/files/AC-216\\_HedgersGuideNewBoilerplate.pdf](http://www.cmegroup.com/trading/agricultural/files/AC-216_HedgersGuideNewBoilerplate.pdf)

Self-Study Guide to Hedging with Livestock Futures and Options (CME Group):  
[http://www.cmegroup.com/trading/agricultural/files/AC-215\\_SelfStuy\\_GuideNYMEX.pdf](http://www.cmegroup.com/trading/agricultural/files/AC-215_SelfStuy_GuideNYMEX.pdf)

Managing Price Risk with Grain and Oilseed Futures and Options (CME Group):  
[http://www.cmegroup.com/trading/agricultural/files/AC-211\\_UpdateManaginPriceRiskGrainsSP\\_r1.pdf](http://www.cmegroup.com/trading/agricultural/files/AC-211_UpdateManaginPriceRiskGrainsSP_r1.pdf)

The CME Group provides a plethora of free educational resources related to the trading of their entire suite of futures, options, and other derivative products. I encourage you to explore their educational resources. <http://www.cmegroup.com/education.html/> Unfortunately, there is not enough time to cover all of this, so our focus will be on futures and options products critical for the pricing and risk management of agricultural and food products.

Throughout the course, I will make various links to the CME Group, and other sources, available to you. These links will be particularly useful to you as you work on your outlook assignments throughout the course of the semester.

## Methods of Evaluation

<u>Activity</u>	<u>Number in Course</u>	<u>Total Course Value</u>
Quizzes	8	80 pts (15%)
Discussion Questions	8	80 pts (15%)
Outlook Blog	1	80 pts (15%)
Exams	3	300 pts (55%)
Total		<b>540 pts (100%)</b>

\*\* Note – percentages are approximate due to rounding. Exact percentages are used in the final grade calculation.

## Course Grading Scale & Grading Policy

### Grade Percentage Points Range

- A 90 – 100% of total points
- B 80 – 89% of total points
- C 70 – 79% of total points
- D 60 – 69% of total points
- E/F Below 60% of total points

Course grades will be assigned based on a traditional grading scale (see above). ASU is on a +/- grading system. However, the awarding of +/- grades will be completely at the discretion of the instructor. I typically use +/- grades when students are on the border between grades (at my discretion). Also, the instructor reserves the right to curve and/or adjust grades if necessary.

## Turnaround Policy

Unless there are unforeseen circumstances (which I will try and warn you about ahead of time), I will attempt to have feedback to you on graded material within 2 days of the due date. For most of the quizzes, you will have your feedback and score instantaneously.

## Methods of Instruction

This course uses BlackBoard for the facilitation of communications between faculty and students, submission of assignments, and posting of grades.

Please study the structure of each of the learning units. The learning units pretty much follow a weekly schedule with some minor modifications. For the most part, each of the learning units are structured as follows:

\* **Learning Materials** - "Learning Materials" may include video lectures, PowerPoint presentations, supplemental text reading, etc. In my face-to-face classes, I am very lecture

orientated and I emphasize the importance of students taking "good notes" in class. In my opinion, good note taking is a critical skill. Therefore, you should synthesize your own notes from the learning materials presented, much as you would in a face-to-face class. Under each "Learning Materials" section, I will post a study guide for the section. This study guide should help you in formulating your notes and directing / streamlining your study.

\* **Learning Checks** - "Learning Checks" are small problems designed to reinforce key concepts covered in video lectures or PowerPoint presentations. The learning checks are listed and presented corresponding to each video lecture and/or PowerPoint presentation (or other related learning material). While the learning checks are not graded, it is critical that you do them! *It is not uncommon for me to put the problems from the learning checks on a quiz or exam (often verbatim)*. A key is provided for each learning check so that you can check your own work. The "Learning Checks" are also a good way to generate discussion. That is, if you have questions related to the "Learning Checks", likely other students will as well.

\* **Quizzes** - There is a quiz for each unit (8 total). Each quiz will contain 10 questions (1 pt. each question). Most of the quizzes will be 100% computer graded, so you will get immediate feedback. *Please note that these quizzes are 1) not timed..so you can take as much time on them as needed, and 2) you may take the quizzes as many times as you like.* In essence, the quizzes serve as a type of problem set.

\* **Discussion Questions** – Each week I will solicit questions from the class. Each student is to submit a unique question regarding the week's material, and I will answer the question in a discussion thread format. The catch is that each student must submit an original question. That is, you cannot repeat a question that has already been posted, but rather have to come up with a new question. I have found this to be a very good way to foster discussion among the group.

\* **Outlook Blog** - In lieu of a term project, each student will write a "blog" as a way to foster discussion related to "commodity outlook". Your blog posts will focus on providing outlook information for a given commodity. Indeed, one of the major economic functions of futures markets is the idea of "price discovery" – in essence how expected supply and demand information is impounded into futures prices (I know these terms don't make sense now). Participating in conversations regarding the expected fundamental supply and demand conditions of various commodity markets will help us better understand these concepts, and help us better understand the economic role of futures markets. More information on the structure of the blog will be provided via BlackBoard. Note that I will ask you to complete a series of intermediate steps in completion of your blog. This way I can provide you some feedback along the way and you won't be cramming to complete the blog at the end of the term.

\* **Exams** - Exams are an important part of the course. Exams are an excellent way for you to demonstrate that you have learned something! There are three exams for the course - Midterm #1, Midterm #2, and Final Exam. Note that the final exam is not comprehensive in a formal sense. However, the material is comprehensive in that it builds on itself. The format of the exams will be a combination of true/false, multiple choice, and essay/problems. The study guides, learning checks, quizzes, etc. are extremely helpful in preparing you for the exams. Historically, most students have found my exams to be challenging, yet straightforward. There is no mystery to what I want you to learn.

## Communicating with the Instructor

This course uses a discussion board called "Hallway Conversations" for general questions about the course and course content. Prior to posting a question, please check the syllabus, announcements, and existing posts. If you do not find an answer, post your question. You are encouraged to respond to the questions of your classmates.

Email questions of a personal nature to your instructor. You can expect a response within 24 hours. If a formal response will be longer than 24 hours, the instructor will send you a quick message acknowledging receipt of your email, with an anticipated response time.

## Online Course

This is an online course. There are no face-to-face meetings. However, students are welcome to visit with the instructor at designated office hours, by appointment, or by virtual means (see section on office hours).

## Email and Internet

ASU email is an [official means of communication](#) among students, faculty, and staff. Students are expected to read and act upon email in a timely fashion. Students bear the responsibility of missed messages and should check their ASU-assigned email regularly.

*All instructor correspondence will be sent to your ASU email account ONLY.*

## Course Time Commitment

This three-credit course requires approximately 135 hours of work. Please expect to spend around 18 hours each week preparing for and actively participating in this course.

## Late or Missed Assignments

Notify the instructor BEFORE an assignment or exam is due if an urgent situation arises and the assignment/exam will not be submitted on time. Published assignment due dates (Arizona Mountain Standard time) are firm. Please follow the appropriate University policies to request an [accommodation for religious practices](#) or to [accommodate a missed assignment due to University-sanctioned activities](#). Note - there will be an automatic 10% deduction for unauthorized late quizzes, problem sets, and discussion board assignments. Even with the penalty though, it is still in your best interest to do the quizzes/assignments as it is the feedback that you receive which is really important! Late exams will not be accepted and will receive a zero.

I do understand that many of you work full-time, and emergencies do come up. So, if you anticipate missing an exam due date for work reasons, or if there is an unexpected emergency, please contact me ahead of time so we can work out a make-up arrangement.

## Incomplete Grades (e.g., "I")

There will be no grades of "I" (incomplete) given for this class for *any* reason. If you find yourself in a situation where you will not be able to complete the course, please contact the instructor to discuss the best way to move forward (please do not drop the course without first consulting with the instructor). Note - missing or doing very poorly on one assignment or quiz, or even doing poorly on an exam is **NOT** grounds for dropping the class. Work with the instructor to determine ways for improvement! I am here to help you!

## Drop and Add Dates/Withdrawals

This course adheres to a compressed schedule and may be part of a sequenced program, therefore, there is a limited timeline to [drop or add the course](#). Consult with your advisor and notify your instructor to add or drop this course. If you are considering a withdrawal, review the following ASU policies: [Withdrawal from Classes](#), [Medical/Compassionate Withdrawal](#), and a [Grade of Incomplete](#).

## Grade Appeals

Grade disputes must first be addressed by discussing the situation with the instructor. If the dispute is not resolved with the instructor, the student may appeal to the department chair per the [University Policy for Student Appeal Procedures on Grades](#).

## Student Conduct and Academic Integrity

ASU expects and requires its students to act with honesty, integrity, and respect. Required behavior standards are listed in the [Student Code of Conduct and Student Disciplinary Procedures](#), [Computer, Internet, and Electronic Communications policy](#), [ASU Student Academic Integrity Policy](#), and outlined by the [Office of Student Rights & Responsibilities](#). Anyone in violation of these policies is subject to sanctions.

[Students are entitled to receive instruction free from interference](#) by other members of the class. An instructor may withdraw a student from the course when the student's behavior disrupts the educational process per [Instructor Withdrawal of a Student for Disruptive Classroom Behavior](#).

Appropriate online behavior (also known as *netiquette*) is defined by the instructor and includes keeping course discussion posts focused on the assigned topics. Students must maintain a cordial atmosphere and use tact in expressing differences of opinion. Inappropriate discussion board posts may be deleted by the instructor. The Office of Student Rights and Responsibilities accepts [incident reports](#) from students, faculty, staff, or other persons who believe that a student or a student organization may have violated the Student Code of Conduct.

The W. P. Carey School takes academic integrity very seriously. Therefore, unless otherwise specified, it is imperative that you do your own work. Any suspected violations of academic integrity will be taken seriously and result in the following sanctions:

- A minimum of zero on the assignment OR
- A reduced grade in the course OR
- A failure in the course OR
- An XE which denotes failure due to academic dishonesty on the transcript OR
- Removal from the W. P. Carey School of Business

Additional information on ASU's academic integrity policy may be found at <http://provost.asu.edu/academicintegrity>

## Threatening Behavior Policy

The university takes threatening behavior very seriously and these situations will be handled in accordance with the Student *Services Manual*, SSM 102-02 <http://www.asu.edu/aad/manuals/ssm/ssm104-02.html>. This includes threatening online behavior or posts.

## W. P. Carey School of Business Honor Code

Please familiarize yourself with the W. P. Carey School of Business Honor Code. The Honor Code can be found at the following link:

<https://my.wpcarey.asu.edu/academic-integrity/upload/Undergraduate-Honor-Code.pdf>

## Religious Accommodations

Accommodations will be made for students with religious holidays. Below is the calendar of official religious holidays. Each holiday noted with two asterisks denotes an observance for which work is not allowed. For these holidays, students will not be penalized in any way for missing assignments or exams. This means that this will not count as an absence in class and they will be granted a makeup assignment or exam, etc.

<https://provost.asu.edu/index.php?q=religious-holiday-calendar>

All requests for accommodation should be submitted to the instructor by the end of the second week of class if possible.

## University Sanctioned Activities

Accommodations will be made for students who miss class related to university-sanctioned activities according to ACD 304-02.

If you are participating in a university-sanctioned activity, please let your instructor know as early in the course as possible so that accommodations can be made.

## Prohibition of Commercial Note Taking Services

In accordance with [ACD 304-06 Commercial Note Taking Services](#), written permission must be secured from the official instructor of the class in order to sell the instructor's oral communication in the form of notes. Notes must have the notetaker's name as well as the instructor's name, the course number, and the date.

## Course Evaluation

Students are expected to complete the course evaluation. The feedback provides valuable information to the instructor and the college and is used to improve student learning. Students are notified when the online evaluation form is available.

## Syllabus Disclaimer

The syllabus is a statement of intent and serves as an implicit agreement between the instructor and the student. Every effort will be made to avoid changing the course schedule but the possibility exists that unforeseen events will make syllabus changes necessary. *Therefore, the instructor reserves the right to modify this syllabus as deemed necessary.* Please remember to check your ASU email and the course site often.

## RPNOW for Online Exams

You will be taking your three exams using the Remote Proctor NOW (RPNOW) system. This system allows you to take your exams at a convenient time as allowed by your school or organization while proctoring your exam by recording the visual, audio, and desktop aspects of the exam and exam environment. Please see *RPNOW for Online Exams* on the course BlackBoard site for information on how to use RPNOW.

## Accessibility Statement

In compliance with the Rehabilitation Act of 1973, Section 504, and the Americans with Disabilities Act of 1990, professional disability specialists and support staff at the Disability Resource Center (DRC) facilitate a comprehensive range of academic support services and accommodations for qualified students with disabilities. [Qualified students with disabilities may be eligible to receive academic support services and accommodations.](#) Eligibility is based on qualifying disability documentation and assessment of individual need. Students who believe they have a current and essential need for disability accommodations are [responsible for requesting accommodations and providing qualifying documentation](#) to the DRC. Every effort is made to provide reasonable accommodations for qualified students with disabilities. Qualified students who wish to request an accommodation for a disability should contact their campus DRC.

Tempe Campus  
<http://www.asu.edu/studentaffairs/ed/drc/>  
480-965-1234 (Voice)  
480-965-9000 (TTY)

Polytechnic Campus  
<http://www.asu.edu/studentaffairs/ed/drc/>  
480-727-1165 (Voice)  
480-727-1009 (TTY)

West Campus  
<http://www.west.asu.edu/drc/>  
University Center Building (UCB), Room 130  
602-543-8145 (Voice)

Downtown Phoenix Campus and ASU Online  
<http://campus.asu.edu/downtown/DRC>  
University Center Building, Suite 160  
602-496-4321 (Voice)  
602-496-0378 (TTY)

## Computer Requirements

This course requires Internet access and the following:  
A web browser ([Chrome](#), [Internet Explorer](#), [Mozilla Firefox](#), or [Safari](#))  
[Adobe Acrobat Reader](#) (free)  
[Adobe Flash Player](#) (free)  
Microphone (optional) and speaker

## Technical Support

This course uses BlackBoard to deliver content. It can be accessed through MyASU at <http://my.asu.edu>.

To monitor the status of campus networks and services, visit the System Health Portal at <http://syshealth.asu.edu/>.

To contact the help desk you have two options:  
chat/email: [247support.cust.com](mailto:247support.cust.com)

call toll-free at 1-855-278-5080, option 3

## Student Success

This is an online course. To be successful:

- check the course daily
- read announcements
- read and respond to course email messages as needed
- complete assignments by the due dates specified
- communicate regularly with your instructor and peers
- create a study and/or assignment schedule to stay on track
- keep an open mind and maintain a healthy desire to learn

## Schedule

Unit	TOPICS	ACTIVITIES/ASSIGNMENTS	POINTS
		<p><b>All assignments are due by midnight of due date unless otherwise noted</b></p>	
<p><b>UNIT 1 (Getting Started)</b></p>	<ul style="list-style-type: none"> <li>• Course Overview</li> <li>• Volatility &amp; Futures Basics</li> <li>• Futures Exchanges</li> </ul>	<ul style="list-style-type: none"> <li>• Discussion Question: Hallway Discussion Intro (Due 10/13/17)</li> <li>• Quiz 1 (Due 10/16/17)</li> </ul>	<ul style="list-style-type: none"> <li>• 10 pts</li> <li>• 10 pts</li> </ul>
<p><b>UNIT 2 (Commodity Futures Markets)</b></p>	<ul style="list-style-type: none"> <li>• Quotes &amp; Contract Specs</li> <li>• Profits, Losses, Margin &amp; Trading Accts</li> </ul>	<ul style="list-style-type: none"> <li>• Learning Checks</li> <li>• Discussion Question (Due 10/23/17)</li> <li>• Quiz 2 (Due 10/23/17)</li> </ul>	<ul style="list-style-type: none"> <li>• 0 pts</li> <li>• 10 pts</li> <li>• 10 pts</li> </ul>
<p><b>UNIT 3 (Traders &amp; Price Analysis)</b></p>	<ul style="list-style-type: none"> <li>• Commitment of Traders (COT) Reports</li> <li>• Fundamental vs. Technical Analysis</li> </ul>	<ul style="list-style-type: none"> <li>• Learning Checks</li> <li>• Quiz 3 (Due 10/30/17)</li> <li>• Discussion Question (Due 10/30/17)</li> <li>• Midterm 1 (Due 11/1/17)</li> </ul>	<ul style="list-style-type: none"> <li>• 0 pts</li> <li>• 10 pts</li> <li>• 10 pts</li> <li>• 100 pts</li> </ul>

<b>UNIT 4</b> <b>(Price Relationships - Basis &amp; Spreads)</b>	<ul style="list-style-type: none"> <li>• Storable vs. Non-Storable Commodities</li> <li>• Spread Trades</li> <li>• Target Prices</li> </ul>	<ul style="list-style-type: none"> <li>• Learning Checks</li> <li>• Discussion Question (Due 11/6/17)</li> <li>• Quiz 4 (Due 11/6/17)</li> </ul>	<ul style="list-style-type: none"> <li>• 0 pts</li> <li>• 10 pts</li> <li>• 10 pts</li> </ul>
<b>UNIT 5</b> <b>(Hedging with Futures)</b>	<ul style="list-style-type: none"> <li>• Hedging Mechanics</li> <li>• Risk Evaluation</li> </ul>	<ul style="list-style-type: none"> <li>• Learning Checks</li> <li>• Discussion Question (Due 11/13/17)</li> <li>• Quiz 5 (Due 11/13/17)</li> <li>• Midterm #2 (Due 11/15/16)</li> </ul>	<ul style="list-style-type: none"> <li>• 0 pts</li> <li>• 10 pts</li> <li>• 10 pts</li> <li>• 100 pts</li> </ul>
<b>UNIT 6</b> <b>(Mechanics &amp; Pricing of Options)</b>	<ul style="list-style-type: none"> <li>• Puts, Calls, &amp; Payoff Diagrams</li> <li>• Option Pricing</li> </ul>	<ul style="list-style-type: none"> <li>• Learning Checks</li> <li>• Discussion Question (Due 11/20/17)</li> <li>• Quiz 6 (Due 11/20/17)</li> </ul>	<ul style="list-style-type: none"> <li>• 0 pts</li> <li>• 10 pts</li> <li>• 10 pts</li> </ul>
<b>UNIT 7</b> <b>(Hedging with Options)</b>	<ul style="list-style-type: none"> <li>• Price Floors &amp; Ceilings</li> <li>• Fences</li> </ul>	<ul style="list-style-type: none"> <li>• Learning Checks</li> <li>• Discussion Question (Due 11/27/17)</li> <li>• Quiz 7 (11/27/17)</li> <li>• Outlook Blog (11/27/17)</li> </ul>	<ul style="list-style-type: none"> <li>• 0 pts</li> <li>• 10 pts</li> <li>• 10 pts</li> <li>• 80 pts</li> </ul>
<b>UNIT 8</b> <b>(Risk Management &amp; Wrap Up)</b>	<ul style="list-style-type: none"> <li>• Practical Pricing &amp; Hedging Considerations</li> </ul>	<ul style="list-style-type: none"> <li>• Discussion Question (Due 11/30/17)</li> <li>• Quiz 8 (Due 11/30/17)</li> </ul>	<ul style="list-style-type: none"> <li>• 10 pts</li> <li>• 10 pts</li> </ul>

	<ul style="list-style-type: none"><li>• Review</li></ul>	<ul style="list-style-type: none"><li>• Final Exam (Due 12/1/17)</li></ul>	<ul style="list-style-type: none"><li>• 100 pts</li></ul> <p><b>Total = 540 pts</b></p>
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**Course Number**

BUS 384

**Course Title**

Business Operations and Planning

**Credits**

3

**Prerequisites**

None

**Textbook**

Benton, W. C. 2014. **Supply Chain Focused Manufacturing Planning and Control**. Cengage Learning.

**Faculty**

**Name:** David D. Van Fleet

**Office:** Santan Hall 235H

**Phone:** 480-727-5110

**Email address:** [ddvf@asu.edu](mailto:ddvf@asu.edu)

**Office hours:** Arranged via email.

**Course Overview**

Planning and executing plans--the what, when, where, how, and who from product/service/project idea to pay back or completion.

**Learning Outcomes -- The goals of this course:**

At the completion of this course, students will be able to:

1. Understand how operations contribute to the health of an organization.
2. Summarize the role of operations planning in organizations.
3. Summarize the essential elements operations planning
4. Describe the various components of planning and control.
5. Identify sources and risks associated with planning and control systems.
6. Understand the role of operations management in overall business strategy.
7. Understand the interdependence of operations functions with other, key functional areas of the firm.
8. Appreciate several of the tools available to evaluate operations techniques.

**Important Aspects of This Course**

- The Syllabus, Course Schedule, and other material on the website provide instructions and week-to-week assignments deadlines.
- The usual rule-of-thumb of 5-6 hours for every credit hour holds, so you should anticipate spending around 15-18 hours a week on this course.

**Topics covered include (but are not limited to):**

- Forecasting
- Sales and Operations Planning

- Supply Chain Focused Inventory Management.
- Materials Requirements Planning/Push Production Systems.
- JIT/Lean Production Systems.
- Push and Pull Production Systems.
- Capacity Requirements Planning.

### Points for Quizzes and Assignments

A numerical score derived from completion and grading of the following will determine the final grade. The point breakdown is as follows:

Weekly Quizzes – 20 points each	240
Discussion Questions – 20 points each	240
Participation	60
Final Individual Project	60
Final Group Project	100
Total	700

### Grading Scale

Grade	Percentage	Points
A	90 - 100%	630 - 700
B	80 - 89%	560 – 629
C	70 - 79%	490 – 559
D	60 - 69%	420 – 489
E/F	Below 60%	< 419

### Chapter Study Plan

- Read the assigned material
- Review the end of chapter discussion questions

### Schedule:

- **Deadlines are absolute -- no exceptions. Print the Course Schedule shown below.**
- **Mark all deadlines on your calendar so that you do not miss any.**
- **All Weekly Quizzes are due before the start of the next class.**
- **All Weekly Discussion Questions are due before the start of the next class.**
- **Some class time will be provided for work on projects.**

<b>Week/Dates</b>	<b>Topic</b>	<b>Assignment</b>
1 Jan 9-13	Getting Started	Examine course website, take notes, and ask questions to clarify
2 Jan 16-20	Introduction	<b>Read</b> Chapter 1
3 Jan 23-27	Forecasting	<b>Read</b> Chapter 2 <b>Assignments Due</b> <ul style="list-style-type: none"> <li>• Quiz over Chapter 1 due by start of class</li> <li>• Discussion question for Chapter 1 due by start of class</li> </ul>
4 Jan 30-31 - Feb 3	Sales and Operations Planning	<b>Read</b> Read Chapter 3 <b>Assignments Due</b> <ul style="list-style-type: none"> <li>• Quiz over Chapter 2 due by start of class</li> <li>• Discussion question for Chapter 2 due by start of class</li> </ul>
5 Feb 6-10	Production Planning	<b>Read</b> Chapter 4 <b>Assignments Due</b> <ul style="list-style-type: none"> <li>• Quiz over Chapter 3 due by start of class</li> <li>• Discussion question for Chapter 3 due by start of class</li> </ul>
6 Feb 13-17	Inventory Management	<b>Read</b> Chapter 5 <b>Assignments Due</b> <ul style="list-style-type: none"> <li>• Quiz over Chapter 4 due by start of class</li> <li>• Discussion question for Chapter 4 due by start of class</li> </ul>
7 Feb 20-24	Materials Requirements Planning	<b>Read</b> Chapter 6 <b>Assignments Due</b> <ul style="list-style-type: none"> <li>• Quiz over Chapter 5 due by start of class</li> <li>• Discussion question for Chapter 5 due by start of class</li> </ul>
8 Feb 27-28- Mar 3	JIT/Production Systems	<b>Read</b> Chapter 7 <b>Assignments Due</b> <ul style="list-style-type: none"> <li>• Quiz over Chapter 6 due by start of class</li> <li>• Discussion question for Chapter 6 due by start of class</li> </ul>

9 Mar 6-10	Spring Break	
10 Mar 13-17	More Production Systems	<b>Read</b> Chapter 8 <b>Assignments Due</b> <ul style="list-style-type: none"> <li>• Quiz over Chapter 7 due by start of class</li> <li>• Discussion question for Chapter 7 due by start of class</li> </ul>
11 Mar 20-24	Capacity Requirements Planning	<b>Read</b> Chapter 9 <b>Assignments Due</b> <ul style="list-style-type: none"> <li>• Quiz over Chapter 8 due by start of class</li> <li>• Discussion question for Chapter 8 due by start of class</li> </ul>
12 Mar 27-31	Remanufacturing	<b>Read</b> Chapter 10 <b>Assignments Due</b> <ul style="list-style-type: none"> <li>• Quiz over Chapter 9 due by start of class</li> <li>• Discussion question for Chapter 9 due by start of class</li> </ul>
13 Apr 3-7	Outsourcing Planning and Control	<b>Read</b> Chapter 11 <b>Assignments Due</b> <ul style="list-style-type: none"> <li>• Quiz over Chapter 10 due by start of class</li> <li>• Discussion question for Chapter 10 due by start of class</li> </ul>
14 Apr 10-14	Implementation	<b>Read</b> Chapter 12 <b>Assignments Due</b> <ul style="list-style-type: none"> <li>• Quiz over Chapter 11 due by start of class</li> <li>• Discussion question for Chapter 11 due by start of class</li> </ul>
15 Apr 17-21	Wrap Up	<b>Assignments Due</b> <ul style="list-style-type: none"> <li>• Quiz over Chapter 12 due by start of class</li> <li>• Discussion question for Chapter 12 due by start of class</li> </ul>
16 Apr 24-28	Individual Project	<b>Assignments Due</b> <ul style="list-style-type: none"> <li>• Individual Project due</li> </ul>
17 May 1-5	Group Project	<b>Assignments Due</b> <ul style="list-style-type: none"> <li>• Group Project due</li> </ul>

## **Weekly assignments**

## **Individual Project**

## **Group Project**

### **Academic Integrity and Ethical Behavior**

Become familiar with the guidelines posted on the University Academic Integrity Website: <http://provost.asu.edu/academicintegrity>.

The W. P. Carey School takes academic integrity very seriously. Therefore, unless otherwise specified, it is imperative that you do your own work. Any suspected violations of academic integrity will be taken seriously and result in the following sanctions:

- A minimum of zero on the assignment OR
- A reduced grade in the course OR
- A failure in the course OR
- An XE which denotes failure due to academic dishonesty on the transcript OR
- Removal from the W. P. Carey School of Business

### **Honor Code**

Become familiar with the W.P. Carey School of Business Honor Code as posted on the Black Board site for this course and available as follows:

<https://my.wpcarey.asu.edu/academic-integrity/upload/Undergraduate-Honor-Code.pdf>

### **Absence Policies**

Notify the instructor in advance of due dates to arrange for absences and make up of homework, quizzes, exams, etc.

### **Religious Accommodations**

Accommodations will be made for students with religious holidays. Below is the calendar of official religious holidays. Each holiday noted with two asterisks denotes an observance for which work is not allowed. For these holidays, students will not be penalized in any way for missing class or assignment. This means that this will not count as an absence in class and they will be granted a makeup assignment or exam, etc. <https://provost.asu.edu/index.php?q=religious-holiday-calendar>

### **University-Sanctioned Activities**

Accommodations will be made for students who miss class related to university-sanctioned activities according to ACD 304-02. If you are participating in a university-sanctioned activity, please let your instructor know as early in the course as possible so that accommodations can be made.

### **Tutoring Support**

Please note that the W. P. Carey School of Business provides free tutoring in BA 201 for a number of undergraduate business classes. Assistance with writing is also provided.

More information regarding courses offered and hours are available here:

<https://my.wpcarey.asu.edu/undergrad/student-success/success-center.cfm?>

In addition to the W. P. Carey Student Success Center, Arizona State University provides writing assistance through multiple platforms – including in class workshops (within your course!). More information can be found here:

<http://studentsuccess.asu.edu/writingcenters>

### **Threatening Behavior Policy**

The university takes threatening behavior very seriously and these situations will be handled in accordance with the Student *Services Manual*, SSM 102-02

<http://www.asu.edu/aad/manuals/ssm/ssm104-02.html>.

### **Disability Accommodations**

If you need an accommodation for a disability, you must register with the Disability Resource Center (DRC).

### **Copyrighted Material**

According to university policy, ACD 304-06 Commercial Note Taking Services, written permission must be secured from the official instructor of the class in order to sell the instructor's oral communication in the form of notes.

**Information contained within this syllabus (except grading and absence policies) is subject to change.**

## COM 414: Crisis Communication

Professor:  
Office:  
Office Hours:

Email:  
Phone

### **Course Description**

The purpose of this course is to explore the role of communication and strategic communication practices throughout the three stages of a crisis event. Broadly, we focus on the risk communication and crisis planning, crisis management and ethical response, and evaluation and organizational learning.

### **Course Objectives**

1. Explain the three basic stages of crisis management, and the communication actions associated with each stage.
2. Explain how communication can prevent, cause, exacerbate, and assist in the recovery from a crisis.
3. Summarize the role(s) of stakeholders, including the influences of audience diversity and vulnerable populations
4. Evaluate responses past crises through case study analysis.
5. Summarize the crisis planning process.
6. Create a crisis plan for an organization.

### **Required Textbooks**

- Coombs, T. W. (2012). *Ongoing crisis communication: Planning, managing, and responding*. (4<sup>th</sup> ed.). Thousand Oaks, CA: Sage.
- Ulmer, R. R., Sellnow, R. L., & Seeger, M. W. (2011). *Effective crisis communication: Moving from crisis to opportunity*. (3<sup>rd</sup> ed.). Thousand Oaks, CA: Sage.

## Required Readings

(These are available to you on Blackboard.)

- Fearn-Banks, K. (2011). The crisis communications plan. In K. Fearn-Banks *Crisis communications: A casebook approach* (4<sup>th</sup> ed.), (pp. 301-339). New York: Routledge.
- CERT. (2012). *CERT Training Materials*. Retrieved from [http://www.citizencorps.gov/cert/training\\_mat.shtm#CERTSM](http://www.citizencorps.gov/cert/training_mat.shtm#CERTSM)
- Seeger, M. W. (2006). Best practices in crisis communication: An expert panel process. *Journal of Applied Communication Research*, 34(3), 232-244. doi: 10.1080/00909880600769944

## Assignments

### Participation

Students' active engagement in the material is essential for success in this course. Thus students must be present both physically and mentally. Students must also be prepared for class by having read the assigned material *before* class and actively engage in discussion of the material during each class period.

### Discussion Questions

Responses are due each Sunday (unless otherwise specified) by 11:59 pm (See BB for details.). On the 'Discussions' link in BB, post *two thought provoking* discussion questions or points of contention *and* a paragraph response or reflection on *each* question. Note: questions about definitions or questions answered in the readings will earn zero (0) points.

### Crisis Communication Plan

(Additional details will be provided via Blackboard and discussed in class.)

Each student will write a crisis communication plan for a client of their choosing. The plan will include each of the 16 components of the plan outlined in the assignment guidelines.

### Crisis Communication Plan Drafts

Students will submit drafts of different segments of the crisis communication plan throughout the semester.

### Crisis Communication Plan Presentation

You and your partner will present their crisis communication plan to the class. Using PowerPoint as an Audio/Visual tool, students will explain the background of the organization, the risk assessment process, and challenges and opportunities faced by the organization for crisis prevention, planning, response, and recovery.

## Exams

Students will complete two exams. Each exam will cover half the term (non-cumulative).

## Point Distribution

<u>Assignment</u>	<u>Total</u>
Participation	150
Discussion Questions (10 weeks worth 15 pts. each)	150
Crisis Communication Plan	250
Plan Drafts (4 sections worth 25 pts. each)	100
Plan Presentation	150
Exams (2 exams worth 100 pts. each)	200
Total	1000

## Grade Distribution

<b>Grade You Want to Earn:</b>	<b>Points Required:</b>
A+	967-1000
A	933-966
A-	900-932
B+	867-899
B	833-866
B-	800-832
C+	767-799
C	733-766
C-	700-732
D	600-699
E	0-599

## **Policies & Procedures**

### **Attendance:**

Attendance is required. The only “excused” absences are:

- Religious holidays.
- University-sponsored events (i.e. athletic teams, debate and forensics, etc.).
- A documented extreme illness or emergency (i.e. car accidents, death in the family, etc.).

In all three cases, for an absence to be excused you will need to provide me with appropriate documentation. If you are going to miss class for religious holidays or university-sponsored events, please notify me at least two weeks in advance so that appropriate accommodations can be made. I will not offer make-up speeches or quizzes or accept late work unless an absence is excused.

You will find this class moves at a fast pace; thus, it benefits you to be present every time we are scheduled to meet. Attendance is mandatory and will factor into your final grade, even if it is not taken every class period. We will be engaging in a number of in-class activities for which participation points will be awarded, and students not present for those activities will not receive points. If you are absent from this class more than two class periods, then you will lose points from your participation grade.

### **Assignments:**

All assignments, unless otherwise noted, are due at the beginning of class even if a student is absent from class or running late. In professional communication practice, an assignment or project that is not timely becomes useless, regardless of the reason. If you are ill or gone the day an assignment is due, email the assignment *before* the start of class. *Assignments turned in after the start of class will be docked a minimum of 20%. Assignments not turned in by the end of class will receive zero points. For every 24-hour period later another 10% will be deducted.*

### **Academic Integrity:**

Academic honesty is expected of all students in all examinations, papers, laboratory work, academic transactions and records. The possible sanctions include, but are not limited to, appropriate grade penalties, course failure (indicated on the transcript as a grade of E), course failure due to academic dishonesty (indicated on the transcript as a grade of XE), loss of registration privileges, disqualification and dismissal. For more information, see <http://provost.asu.edu/academicintegrity>.

### **Disability Resource Center:**

If you are registered with the disability resource center please notify me so that I may make accommodations as needed.

**Technology & Outside Work:**

Use of laptops, cell phones, MP3 players, and other technology is prohibited during class time. All items must be put away and turned off when you enter class. In addition, no outside work is allowed in class (this includes homework and studying for another class). *Violation of this policy will result in dismissal from the class and forfeiture of the class activity points for the day.*

***Diversity / Harassment:***

All members of this class will be treated with respect. Freedom of expression requires tolerance of opinions that may be offensive to some. However, conduct which constitutes harassment or discrimination on the basis of sex, color, religion, marital status, sexual orientation, national origin, age, beliefs, or disability is strictly prohibited. If you feel uncomfortable in the classroom, please let me know so it can be corrected.

*\*This syllabus is subject to change as necessary.*

W. P. CAREY SCHOOL OF BUSINESS  
ARIZONA STATE UNIVERSITY

FIN 421 - SECURITY ANALYSIS AND PORTFOLIO MANAGEMENT

# Course Syllabus

## 0. Administrative

Instructor	David Schreindorfer
Office	BAC 532
Phone	(480) 965-6212
Email	david.schreindorfer@asu.edu
Web page	Blackboard
Office hours	Tuesday 2:00 – 3:00 PM and 5:00 – 6:00 PM Thursday 2:00 – 3:00 PM
Classes	Section 25667 T Th, 12:00 – 1:15 PM, BA 365 Section 10894 T Th, 3:00 – 4:15 PM, BA 365 Section 10893 T, 6:00 – 8:45 PM, BA 365
TA	Tyler Beason, tbeason@asu.edu Office hours: Monday 2:00 – 3:00 PM, Wednesday 3:30 – 4:30 PM, BAC 554

## 1. Course Overview

**Goal:** The objective of the class is to provide you with the knowledge to manage a large portfolio of assets or to knowledgeably select and monitor someone who does so for you. We will study how to build a portfolio that optimally uses the limited capacity for bearing risk, how to choose actively and passively managed investments, and how to measure their performance. While the class has a bias towards equities, we will cover other asset classes, such as fixed income securities, derivatives, and currencies as well.

Students who master the course material will acquire the analytical tools and financial theory necessary for making investment decisions and understanding the paradigms by which financial securities are valued. These skills will also prepare you for more advanced courses on the topics we cover.

The Undergraduate Program of the W.P. Carey School of Business has established the following learning goals for its graduates:

- **Critical Thinking**
- Communication
- **Discipline Specific Knowledge**
- Ethical Awareness and Reasoning
- Global Awareness

Items in bold have significant coverage in this course.

**Prerequisites:** Students are expected to have completed core courses in basic finance and statistics, and have a working knowledge of Excel. The study of investments is inherently quantitative and relies heavily on analytical tools and economic theory. In particular, we will use tools from basic probability theory, statistics and regression analysis throughout the course. Some familiarity with matrix algebra will also be helpful (but not essential). I will briefly review these tools as we use them. Lastly, we will make extensive use of financial market data and manipulate it in Excel. I expect that you have a good working knowledge of Excel basics (cell references, build-in functions such as sum() and average(), formatting and creating graphs etc.), but I will review more advanced topics that are needed to complete homework assignments (sorting data, data tables, Monte Carlo simulation etc.) in class.

### What I expect

- On the Friday before each lecture I will post a set of class notes. In most weeks, I will additionally post an assignment. Please print both and bring them to class.
- Read the class notes and assigned readings before each class.
- If you miss class you are *required* to find out what was covered from other students in class.
- I expect professional etiquette.
- Please do not pass your solutions to homework assignments on to students who may take my class in the future. In the same vein, you are not allowed to obtain solutions from students who took my class in the past. If you do, you violate both ASU's Academic Integrity Policy and the business school's honor code!

### Textbook

- Bodie, Kane and Marcus: "Essentials of Investments, 9th Edition", McGraw-Hill

McGraw-Hill tends to 'update' their textbooks every year. In my view, this is largely unnecessary. Any of the last few editions will be sufficient. However, if you work with an older edition it is your responsibility to identify the chapters corresponding to the assigned readings.

Also note that the 10th edition of the textbook is scheduled to be released in late January of 2016, which will reduce the resell value of the current edition. If you decide to wait for the 10th edition, it is your responsibility to ensure that you have access to an older edition in order to complete the assigned readings in the meantime.

## 2. Exams, Homeworks and Grading

The course grade will be based on assignments and exams as follows

$$\frac{1}{2} \times \text{Assignments} + \frac{1}{2} \times \max \left[ \frac{1}{3} \times \text{Midterm} + \frac{2}{3} \times \text{Final} , \text{Final} \right]$$

In addition, I will provide practice questions following every lecture. These are not to be turned in, but I highly recommend you to work on them – they will be very helpful in preparing for the exams!

**Assignments:** There will be an assignment due almost every week. Assignments should be submitted electronically on Blackboard, and are to be completed individually or in groups of two. Please name the files 'hw01\_lastname1\_lastname2', 'hw02\_lastname1\_lastname2', etc. (with a single name if you work alone). Late submission will be accepted under no circumstances.

Assignments are designed to apply techniques learned in the course to real data, in a similar manner to how investment professionals apply them in practice. However, the Excel tools you will learn while working in the assignments will be useful in other areas of finance as well. I encourage you to start working on the assignments early as most of them will be time consuming – many problems will require a sequence of challenging calculations in Excel. I encourage you to seek help from the TA.

**Exams:** There is one short midterm (60 minutes) and one comprehensive final exam (110 minutes). The midterm will be taken during class time. Only calculators are permitted for the exams, but I will provide you with a list of formulas. The formula sheet will be available to you prior to the exam, and I am open to reasonable requests to expand it.

### 3. Policies

**Re-grade Policy:** Any re-grade requests must be submitted in writing to me no later than one week following the day the assignment was returned. For the re-grade request, please provide your name along with a brief summary of why you think the grading was in error. Note that the entire assignment will be re-graded, so any re-grade request may result in a lower grade.

**Recordings:** No student may record any classroom activity without my express written consent.

**Mobile devices and laptops during class:** Research on learning shows, unexpected noises and movement automatically divert and capture peoples attention, which means you are affecting everyones learning experience if your cell phone, pager, laptop, etc. makes noise or is visually distracting during class. I ask you to turn off your mobile devices and close your laptops during class. If you take notes on your laptop, you must turn the sound off so that you do not disrupt other students learning. You should only be taking notes on your laptop. Ensure that other students are not distracted by your screen.

**Academic Integrity and Ethical Behavior:** This course will be conducted according to the standards indicated in the Students Academic Integrity Policy of Arizona State University at <http://provost.asu.edu/academicintegrity>. Students are expected to be familiar with the Policy.

Please also review the W. P. Carey School of Business Honor Code:

<https://my.wpcarey.asu.edu/academic-integrity/upload/Undergraduate-Honor-Code.pdf>

**Threatening Behavior Policy:** The university takes threatening behavior very seriously and these situations will be handled in accordance with the Student Services Manual, SSM 102-02 <http://www.asu.edu/aad/manuals/ssm/ssm104-02.html>.

**Disability Accommodations:** For disability accommodation, you must be registered with the Disability Resource Center.

## 4. Feedback, Questions, and Concerns

This course is conceptually and analytically challenging, and will require a large time commitment from students. You are welcome to stop by my office to discuss specific questions, course topics, or other interesting areas of finance and economics. In addition, if you have any concerns about the course, please let me know.

This course should be interactive, where class participation and discussion are essential to learning. Therefore, I encourage you to bring up any relevant practical and professional experiences you might have, and to augment or challenge any of the financial theories and tools we discuss.

I also welcome your feedback about the course, its material, and its instructor. Feel free to talk to me after class, drop by my office, e-mail me, or drop a note in my mailbox (BAC 532) if you have any comments or criticisms.

## 5. Important Dates

- T, Jan 11 First day of classes
- T, Mar 1 Midterm Exam, Section 10893
- Th, Mar 3 Midterm Exam, Sections 25667 and 10894
- M-F Mar 7-11 No class (Spring Break)
- T, Apr 26 Last class for T section.
- Th, Apr 28 Last class for TTh section.
- TBA Final Exam

## 6. Course Outline

- Please note that the dates given below are approximate and that topics are subject to change
- I will assign some additional readings as we go along

## I: INTRODUCTION

1/12-1/14	<b>Overview</b> What is this course about?; Rules of the game	
	<b>Financial Markets</b> Types and characteristics of financial assets; Trading basics	Assignment-1 BKM 1-3
1/19-1/21	<b>Risk &amp; Return</b> Returns and compounding; Probability distributions and moments; Historical overview of risk and return of different asset classes	Assignment-2 BKM 5.1-5.4
	<b>The Present Value Formula</b> The Present Value Formula; Understanding why Prices Move; The Need for Asset Pricing Models	

## II: ASSET ALLOCATION

1/26-1/28	<b>Portfolio Theory</b> Portfolio mathematics; Mean-variance analysis; Diversification	Assignment-3 BKM 5.5-5.6, 6.1-6.4
2/2-2/4	<b>Asset Allocation in Practice</b> Problems with mean-variance analysis; Alternatives to trading off mean against variance; Back testing and empirical evidence	Assignment-4 Article: <i>Leverage Aversion and Risk Parity</i>
2/9-2/11	<b>Return Predictability and Asset Allocation</b> Regression analysis and conditional moments; Efficient market hypothesis; Empirical evidence on return predictability; Market timing	Assignment-5 BKM 8, Article: <i>New Facts in Finance</i>
2/16-2/18	<b>Changing Volatility and Asset Allocation</b> Time-varying volatility; The VIX; Volatility timing	Article: <i>The Economic Value of Vol Timing</i>

### III: ASSET PRICING MODELS & PERFORMANCE EVALUATION

2/23-2/25	<b>Capital Asset Pricing Model</b> Financial Market Equilibrium; the Capital Asset Pricing Model (CAPM)	BKM 7.1–7.2
3/1-3/3	Catch-up; Review; Midterm (3/1 for Section 10893, 3/3 for Sections 25667 and 10894)	
3/15-3/17	<b>Empirical Evidence on the CAPM and Anomalies</b> How to test the CAPM; Empirical Evidence on the CAPM; Asset Pricing Anomalies	Assignment–6 BKM 7.3
3/22-3/24	<b>Multifactor Models and the Arbitrage Pricing Theory</b> Arbitrage Pricing Theory (APT), Tracking Portfolios, Trading Strategies, the Fama French Three Factor Model	BKM 7.4–7.5, Article: <i>Portfolio Advice for a Multifactor World</i>
3/29-3/31	<b>Investment Industry &amp; Performance Evaluation</b> Background on Mutual Funds, Performance Evaluation, Performance Decomposition	Assignment–7 BKM 4, 18

### IV: BONDS, DERIVATIVES, AND CURRENCIES

4/5-4/7	<b>Fixed Income I – Basics</b> Bond Terminology; Prices, Discounts, and Interest Rates; Yield-to-Maturity; Term Structure of Interest Rates	BKM 10
4/12-4/14	<b>Fixed Income II – Bond Portfolio Management</b> Interest Rate Sensitivity; Duration and Convexity; Long Term Capital Management: An Example	Assignment–8 BKM 11
4/19-4/21	<b>Forwards, Futures, and Options</b> Derivative Markets; Payoffs, Hedging, and Pricing of Futures; Option Payoffs and Strategies; Put-Call Parity; Binomial Option Pricing; the Black-Scholes Formula	Assignment–9 BKM 15–17
4/26-4/28	<b>Currencies and International Investment</b> International diversification; Home bias puzzle; Exchange rates; Covered interest parity; The carry trade	

**ARIZONA STATE UNIVERSITY  
W. P. CAREY SCHOOL OF BUSINESS**

**COURSE SYLLABUS**

**DERIVATIVES SECURITIES**

**FIN 427 – 71215  
ROOM: BA 258  
TIME: T: 6:00 – 8:45PM**

**CONTACT INFORMATION**

George O. Aragon  
Phone: 480-965-5810  
Office: BAC 538N  
Office Hours: TH, 3-5PM, and by appointment  
E-Mail: george.aragon@asu.edu

**COURSE DESCRIPTION AND LEARNING OBJECTIVES**

This course is an introduction to derivative assets such as futures, forwards, swaps, and options, financial engineering, risk management, and credit derivatives. We will cover the pricing of these derivative assets as well as securities that contain embedded options. We will consider risk management strategies such as static and dynamic hedging. Applications will be considered from equity, commodity, and bond markets.

**COURSE MATERIALS**

- **Textbook:** J. C. Hull, Fundamentals of Futures and Options Markets. Pearson. 8th edition: 2014 [ISBN-10: 0132993341]
- **Cases:**
  - *American Barrick Resources Corporation: Managing Gold Price Risk # 9-293-128*
  - *First American Bank: Credit Default Swaps – Prod. #: 203033-PDF-ENG*
- **Lecture notes and required readings:** available from the course website (on Blackboard).
- **Calculator** – to be used during midterm and final examinations.
- **Problem Sets:** available on blackboard.

*It is considered a violation of academic integrity to utilize course materials that are illegally sourced. Please ensure that you are ordering and paying for your own materials as outlined in the ordering instructions.*

## **COURSE REQUIREMENTS AND GRADING**

The course grade will be based on:

- Midterm Exam 1 (35%), Final Exam (35%), Two case assignments (2 x 10%), Class Participation (10%)

**Midterm and Final Exams:** There is one midterm exam and one final exam. The midterm will be taken during class time. Final exam will follow the Final Exam Schedule. Only calculators are permitted for the exams.

**Case Assignments:** Students will be divided into teams when preparing the written case assignments. Each team will submit a single response to each case assignment. All members of the same team will receive the same case grade for each written assignment. Students must be prepared to discuss the case during lecture. Each of the two case assignments will be weighted equally and together will contribute a 20% weight to the total course grade. Students will be divided into teams. Each team will submit a single response to each case assignment. All members of the same team will receive the same case grade for each written assignment. Cases assignments are due at the beginning of the class in which it is discussed.

**Class Participation:** Attendance in class is required. Actual contribution to the learning in the classroom is important in the participation grade. In addition, I will hand out problem sets about once per week. These will not be graded, but will be necessary to master the course material.

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## **IMPORTANT DATES**

08/25/2015	First day of class
09/22/2015	American Barrick – Case assignment and discussion
10/06/2015	Midterm Exam 1
10/13/2015	Fall Break – no class
11/05/2015	First American Bank – Case assignment and discussion
12/8/2015	Final Exam

## **COURSE POLICIES**

### *Absences*

You are expected to attend every class. You will receive a score of zero for any exam or assignment that you did not submit due to an unexcused absence. An absence due to job market interviews, illness or family emergency may be excused, provided that you notify me as soon as possible. Failure to make such timely notification may result in denial of your request.

### *Phones and Laptops*

**Please turn off your phones and laptops before class.** The use of these devices during class is generally not permitted with the exception of providing access to lecture notes.

### *Re-grade Policy*

Any re-grade requests must be submitted in writing to me no later than one week following the day the assignment was returned. For the re-grade request, please provide your name along with a brief summary of why you think the grading was in error. Note that the entire assignment will be re-graded, so any re-grade request may result in a lower grade.

### *Academic Integrity and Ethical Behavior*

The W. P. Carey School takes academic integrity very seriously. Therefore, unless otherwise specified, it is imperative that you do your own work. Any suspected violations of academic integrity will be taken seriously and result in the following sanctions:

- A minimum of zero on the assignment OR
- A reduced grade in the course OR
- A failure in the course OR
- An XE which denotes failure due to academic dishonesty on the transcript OR
- Removal from the W. P. Carey School of Business

Additional information on ASU's academic integrity policy may be found at <http://provost.asu.edu/academicintegrity>

### *Religious Accommodations*

Accommodations will be made for students with religious holidays. Below is the calendar of official religious holidays. Each holiday noted with two asterisks denotes an observance for which work is not allowed. For these holidays, students will not be penalized in any way for missing class or assignment. This means that this will not count as an absence in class and they will be granted a makeup assignment or exam, etc. <https://provost.asu.edu/index.php?q=religious-holiday-calendar>

### *University-Sanctioned Activities*

Accommodations will be made for students who miss class related to university-sanctioned activities according to ACD 304-02. If you are participating in a university-sanctioned activity, please let your instructor know as early in the course as possible so that accommodations can be made.

*Tutoring Support*

Please note that the W. P. Carey School of Business provides free tutoring in BA 201 for a number of undergraduate business classes. Assistance with writing is also provided. More information regarding courses offered and hours are available here:  
<https://my.wpcarey.asu.edu/undergrad/student-success/success-center.cfm?>

*Threatening Behavior Policy*

The university takes threatening behavior very seriously and these situations will be handled in accordance with the Student Services Manual, SSM 102-02  
<http://www.asu.edu/aad/manuals/ssm/ssm104-02.html>.

*Disability Accommodations*

If you need an accommodation for a disability, you must register with the Disability Resource Center (DRC).

**ALL INFORMATION CONTAINED WITHIN THIS SYLLABUS IS SUBJECT TO CHANGE**

## Course Outline:

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### 1. Overview: Options, futures, forwards

*Topics:*

Financial engineering  
Portfolio strategies using derivatives  
Review of spot-futures parity, put-call parity  
Credit risk instruments  
Continuous compounding: review

*Readings:*

Hull, Chapter 1

### 2. Forward/Futures Pricing

*Topics:*

Contract parameters;  
the futures price;  
settlement and margins,  
forwards vs. futures  
  
Index arbitrage and transaction costs  
Synthetic positions and quasi-arbitrage

*Readings:*

Hull, Chapter 2.1-2.7, 2.11

Hull, Chapter 5.1-5.10

*Prepare problem set 1 after this lecture*

### 3. Commodity Contracts

*Topics:*

Convenience yields, carrying costs  
Price discovery  
Seasonality, basis risk

*Readings:*

Hull, Chapter 5.11-5.14

*Prepare problem set 2 after this lecture*

#### 4. **Static hedging and hedge funds**

*Topics:*

The optimal hedge ratio  
Asset mismatches: basis risk and the effectiveness of the hedge  
Application: pure plays and portable alpha  
Hedge funds and the problems of performance evaluation

*Readings:*

Hull, Chapter 3  
*Prepare problem set 3 after this lecture*

#### 5. **FRA's and Swaps**

*Topics:*

Motivation for swaps  
Swaps and FRAs  
Pricing swaps from forward rate curve  
Risk management

*Readings:*

Hull, Chapter 4  
Hull, Chapter 6.3  
Hull, Chapter 7

*Prepare problem set 4 after this lecture*

## 6. **Option pricing: binomial model**

### *Topics:*

- Basic payoffs of options
- Terminology and definitions
- No-arbitrage properties
- Arbitrage derivation of derivative prices
- Risk-neutral pricing
- Early exercise decisions
- Calibration of model

### *Readings:*

Hull, Chapters 9-12

*Prepare problem set 5 after this lecture*

## 7. **Option pricing: Black-Scholes model**

### *Topics:*

- The Black-Scholes equation
- Option deltas and elasticities
- Implied volatility
- Delta hedging

### *Readings:*

Hull, Chapter 13, 19.2

*Prepare problem set 6 after this lecture*

## 8. **Dynamic hedging**

### *Topics:*

- Dynamic hedging in the binomial model
- Dynamic hedging using the Black-Scholes model
- The Greek letters (delta, gamma, lamda, theta, vega, etc.) and why they matter
- Pitfalls of dynamic hedging

*Readings:*

Hull, Chpt.17

*Prepare problem set 7 after this lecture*

## 9. **Credit Risk and Credit Derivatives**

*Topics:*

Credit Ratings

Default and Recovery Rates

Estimating default probabilities from bond prices

Credit risk mitigation

Credit default swaps

CDO's

*Readings:*

Hull, Chapter 23

*Prepare problem set 8 after this lecture*

## 10. **Exotic options and Monte Carlo pricing**

*Topics:*

Path dependency

Risk-neutral distribution

*Readings:*

Hull, Chapter 18

Hull, Chpt. 22.1

*Prepare problem set 9 after this lecture*

**\*\*Disclaimer\*\***

This syllabus is to be used as a guideline only. The information provided is a summary of topics to be covered in the class. Information contained in this document such as assignments, grading scales, due dates, office hours, required books and materials may be from a previous semester and are subject to change. Please refer to your instructor for the most recent version of the syllabus.

## **IEE 454 – Risk Management**

### **Course Overview, Directions, and Timelines**

Welcome to IEE 454 – Risk Management. Here is the plan for the semester:

- All students should have access to the Power Point slides and any additional readings on the Blackboard.
- The course syllabus that follows contains the course description, learning objectives, and recommended timeline for the semester.

### **Course Foundation**

This course is a foundation course to our Systems Engineering curriculum and our Engineering Management curriculum at ASU. As such it must address all of the concepts needed for a successful system planning, design and build process. The foundation for the course is based upon the following notions:

- Risk is present throughout our lives.
- All projects have risks.
- Achieving efficient and effective risk management
- Issue and crisis management arise from risk management failure

### **Course Description**

Methods and tools for identifying, assessing, mitigating and controlling risk in business and engineering design activities. Decision tools include cost-benefit analysis, decision trees, value of information, Bayesian statistical decision making, fault trees, and failure modes and effects analysis (FMEA).

### **Textbook**

Wang, John X. and M. L. Roush, *What Every Engineer Should Know About Risk Engineering and Management*, CRC Press, 2000.

Note: It is recommended that students purchase the hard copy of this book rather than an electronic version. Computers, tablets, phones, devices that can take pictures, and devices that can transmit are not allowed to be used during the exams.

### **Prerequisite Topics**

This is an overview undergraduate course that can be completed by any junior or senior Engineering student. With the expectation that many of the tools will be based upon statistical foundations, either IEE 380 or ECN 221 with a “C” or higher is a prerequisite.

### **Instructor**

Dr. Dan McCarville  
Office Location: Brickyard Engineering 350, Tempe  
Email: [daniel.mccarville@asu.edu](mailto:daniel.mccarville@asu.edu)  
Office Phone: (480)727-7674

## Learning Objectives

Students will understand how to incorporate risk minimization principles and practice in engineering design and how to manage various risks through assessment methods and mitigation strategies. Upon completing the course, the student should be familiar with the modern methods of risk engineering to ensure safe, reliable, and profitable products and how to manage financial, schedule, and performance risks in projects.

## Literature Review Assignment

Students are required to write a formal literature review paper that will allow the students to explore more deeply a Risk Management topic. Topics should be chosen from our various lecture topics; however, can be a topic of personal interest to the student. This is an individual assignment; it is not a team assignment. There are two parts to this assignment. The first is a preliminary literature review that is worth 10 points. The second assignment is the final literature review which is worth 90 points. Students will gather their research, make interpretations, and evaluate their findings. Students must not copy or plagiarize; the papers will be checked.

## Course Grading Plan

The course grade will be determined based upon the total points each individual students achieves in the following categories:

Preliminary Literature Review	10 points
Final Literature Review	90 points
Exam #1	100 points
Exam #2	100 points
Exam #3	<u>100 points</u>
Total Available Points for All Students	400 points

## Classroom Policies

Laptops, computer tablets, and phones are not permitted to be used during lectures.

Laptops, computer tablets, phones, devices that can take photos, and devices that can transmit are not allowed to be used during the exams; calculators are the only electronic device allowed during exams.

## **ASU Policies Applied to This Course**

### **1. Absence & Make-Up Policies**

Accommodations will be made for religious observances provided that students notify the instructor at the beginning of the semester concerning those dates. Students who expect to miss class due to officially university-sanctioned activities should inform the instructor early in the semester. Alternative arrangements will generally be made for any examinations and other graded in-class work affected by such absences.

### **2. Classroom Behavior**

Cell phones and pagers (must be/or state alternative rule) turned off during class to avoid causing distractions. The use of recording devices (is/is not) permitted during class. Any violent or threatening conduct by an ASU student in this class will be reported to the ASU Police Department and the Office of the Dean of Students.

### **3. Academic Integrity**

All students in this class are subject to ASU's Academic Integrity Policy which is available at the following link:

<https://provost.asu.edu/academic-integrity/policy>

Students should acquaint themselves with its content and requirements, including a strict prohibition against plagiarism. All violations will be reported to the Dean's office, who maintain records of all offenses.

### **4. Disability Accommodations.**

Suitable accommodations will be made for students having disabilities and students should notify the instructor as early as possible if they will require same. Such students must be registered with the Disability Resource Center and provide documentation to that effect.

### **5. Title IX Federal Law**

Title IX is a federal law that provides that no person be excluded on the basis of sex from participation in, be denied benefits of, or be subjected to discrimination under any education program or activity. Both Title IX and university policy make clear that sexual violence and harassment based on sex is prohibited. An individual who believes they have been subjected to sexual violence or harassed on the basis of sex can seek support, including counseling and academic support, from the university. If you or someone you know has been harassed on the basis of sex or sexually assaulted, you can find information and resources at <http://sexualviolenceprevention.asu.edu/faqs/students>.

## Recommended Timing for the Semester

Module	Title	Chapter
01	Introduction	
02	Risk Management Overview	1
03	Risk Identification - Physics of failure and Environmental Impact	2
04	Risk Identification - Testing Reliability	2
05	Risk Assessment - Probability	3
06	Risk Assessment Fault Tree Analysis	3
07	Risk Assessment Event Tree Analysis	3
08	Risk Engineering - Fishbone Diagrams	4
09	Risk Engineering - Failure Mode and Effects Analysis	4
10	Risk Engineering - Failure Mode and Effects Analysis	4
11	Risk Engineering - Redundancy and Fault Tolerance	4
12	Risk Acceptance	5
13	Risk Mitigation	5
14	Safety	5
15	Robust design	7
16	Project Risk Management - Introduction	6,8
17	Project Schedule Risk Management - PERT and CPM	6,8
18	Project Budget Risk Management	6,8
19	Project Risk Management - Monitor and Control	6,8
20	Quality System Project - Reyman	
21	Enterprise Risk Management - Procedures and Documentation	
22	Monte Carlo Simulation	9
23	Security Risk Management	
24	Financial Risk Management	
25	Financial Risk Management	
26	Crisis Management	

**OGL 421: Project Risk Management**  
**Fall 2012**  
**Bachelor of Organizational Leadership**  
**Arizona State University**  
**“DRAFT”**

**Course Description:**

*Project Risk Management* will introduce students to the philosophy, principles, practices and techniques for managing risk in projects. The course will cover risk identification, qualitative risk management, risk treatment, monitoring and review, project processes, risk allocation, environmental risk, and quantification of project risk. Students will learn that risk management assists project managers in setting priorities, allocating resources, and implementing actions and processes that reduce the risk of the project not achieving its objectives.

**Course Objectives:**

At the conclusion of the course, students will:

1. know how to establish the risk management context identifying objectives, stakeholders, and key elements.
2. understand the risk management approach as it applies to project management.
3. be able to identify project risks and how they manifest.
4. learn how to complete a qualitative risk assessment focusing in likelihood, level, and consequences.
5. be able to evaluate and rank project risk based on the established context.
6. learn how to develop a risk treatment plan with specific options and responses.
7. know how to communicate and report the risk management plan.
8. understand the importance of creating controls to monitor and review project risk.
9. be able to create a basic quantitative risk assessment for a project.

**Required Textbook:**

Cooper, D.; Grey, S.; Raymond, G.; and Walker, P. (2005). *Project Risk Management Guidelines: Managing Risk in Large Projects and Complex Procurements*. [e-Book Custom Edition].\*

Retrieved from Cooper, D.; Grey, S.; Raymond, G.; and Walker, P. (2005). *Project Risk Management Guidelines: Managing Risk in Large Projects and Complex Procurements*. John Wiley & Sons.

\* This is an electronic book (e-Book) that will be made available online only.

**Required Materials:**

Students must be able to access materials in the ASU library through the library portal. Students are expected to read all assigned handouts and online materials.

## **Course Learning Activities:**

The content of this course will be delivered through a mix of lectures and peer learning exercises. Students will read materials from the text and from online sources. All in-class learning activities are action-based and provide hands-on approaches to real world situations. These activities include case study discussion/presentation, chapter presentations, and simulation exercises. Students will take two tests during the semester and a final examination. Students will respond to probes about materials in online Threaded Discussions (5) or in small group discussion. Students will complete two minor writing assignments. Groups will also be responsible for a major term project paper and presentation at the end of the semester.

## **How to be Successful in This Course:**

Students will need to keep up with the readings and the assignments on a regular basis. Please do not wait until the last minute to assess and start your work. Don't fall behind, you may not be able to catch up. This syllabus is designed to give you a heads-up on what is coming ... pay attention! It is assumed that you are here to learn, acquire new knowledge, and develop new skills. Given these assumptions, you are expected to: participate in all online threaded discussions, complete all assignments on time, contact your instructor for any guidance you need related to the course, and demonstrate respect for all of your colleagues.

## **OFFICE HOURS:**

Office hours are available in Daytona Hall # 114 as follows:

Monday/Wednesday	10:00 am – 12 noon
Tuesday/Thursday	2:30 pm – 5:30 pm

Students are also invited to make appointments for sessions outside of these hours. The office phone number is 928-854-9724.

## **E-MAIL PROTOCOL:**

Please use the following guidelines when submitting emails to my attention. Your subject line should include:

- A) The class number – OGL 421
- B) A word or two that captures the main point of your email.

I will respond to your email within 24 hours. You may also call my office during regular office hours for a quicker response.

Email Address:        Raymond.Vanderriet@ASU.edu

## **LATE WORK:**

Any assignment turned in after the deadline will lose credit at the rate of 10% per day late. Only under extraordinary and very well documented circumstances will the late penalty be waived. Such situations must be brought to the instructor's attention immediately after they occur. **No late work will be accepted after the last day of the course.** Late work will be counted at my discretion. Students needing assistance in situations such as a death in the family, illness, accident, and other critical incidents are encouraged to contact the campus main office before contacting my office. The main office can be reached by phone at **928.854.9705**.

## **GRADING SYSTEM:**

96 – 100 = A	90 – 95 = A-	87 – 89 = B+	83 – 86 = B
80 – 82 = B-	77 – 79 = C+	73 – 76 = C	70 – 72 = C-
67 – 69 = D+	63 – 66 = D	60 – 62 = D-	0 – 59 = F

## **LEARNING UNITS:**

The topics covered in this course follow:

- Risk Management Approach
- Establish the Context
- Risk Identification
- Qualitative Risk Management
- Risk Evaluation
- Risk Treatment
- Monitoring and Review
- Communication and Reporting
- Project Processes and Plans
- Risk Allocation
- Environmental Risk
- Quantification of Project Risk

## **Written Assignments:**

### *Minor Writing Assignment I (Mini-Case Study)*

This assignment requires that you develop a mini-case study. The project you choose for the case study may be a fictitious scenario or a real world project that is already completed. This particular exercise should be designed to focus on establishing the context, risk identification, and qualitative risk assessment. Review chapters 2 – 4 for project guidance and examples of analysis. This mini-case study should be at least 750 -900 words in length. Be sure to integrate project risk management theory into your analysis. You will be expected to include the following components in your case study:

1. Description of the Project
2. Project Objectives
3. Criteria for Success
4. Stakeholder Analysis
5. Risk Description
6. Prioritized List of Risks
7. Risk Consequences and Likelihood

### *Minor Writing Assignment II (Mini-Case Study)*

This assignment requires that you develop a mini-case study. The project you use for this case study must build on the project presented in *Minor Writing Assignment I*. This particular exercise should be designed to focus on risk treatment, risk monitoring and review, and risk communication and reporting. Review chapters 6 – 8 for project guidance and examples of analysis. This mini-case study should be at least 750 -900 words in length. Be sure to integrate project risk management theory into your analysis. You will be expected to include the following components in your case study:

1. Risk Treatment Options Worksheet
2. Risk Action Plan Summary
3. Monitoring and Review Plan
4. Communication and Reporting Plan

### *Group Term Project Assignment*

Each group is required to complete a Term Project Paper and a Presentation. Group membership will be assigned in class during the first two weeks. Please check your online course for detailed requirements and due dates. Note: The nature and scope of the project must be approved by the instructor. The Term Project Paper must be at least 25 pages in length—excluding title page and reference list.

You will be expected to apply what you have learned in class by developing a comprehensive project risk management plan. The project you choose for the case study may be a fictitious scenario or a real world project that is already completed. Be sure to integrate project risk management theory into your analysis. Please review the following text sources for guidance as you prepare to complete this case study:

- Risk Management Process Checklist on pp.331 -334.
- Risk Management Worksheets on pp.335 – 356.
- Examples of Risks and Treatments on pp.357 – 369.

The checklists on pp.331 – 334 will be very helpful in formatting your paper. Although there are various components to any given project (and they vary widely), for the sake of this class you will be expected to include the following components in your final project:

1. Description of the Project
2. Establish the Risk
3. Stakeholders' Analysis
4. Risk Analysis
5. Qualitative Risk Assessment
6. Risk Treatment
7. Risk Action Plans
8. Monitoring and Review Plan
9. Communicating and Reporting Plan

## Term Project Paper Writing Guidelines:

- The written segment of the Term Project Paper assignment will adhere to APA rules of scholarship and style.
- The assignment will be double-spaced (do not triple or quadruple space sections).
- 12-point font, Times New Roman or Courier font is encouraged.
- Margins cannot be larger than one-inch.
- Spelling and grammar checks are required.
- Topic and subtopic headings are encouraged where appropriate.
- A title page is required. Please include the following: Student name, course name and section number, term project title, and date of submission.
- A reference list page is required.
- Cite sources throughout paper where appropriate.

## Threaded Discussions:

FIVE threaded discussions will be assigned during the course. Discussion might include research activities, audio/video clips, cases, web site investigations, and the like. These discussions will take place in your online course shell. No late postings will be accepted. Always save your work or print a hard copy of what you have done for a backup. Do NOT start on any threaded discussions before the date listed on the "Course Schedule." Communicate only important points for responses to questions, and use questions as a spring board for se

## General Course Expectations:

All students are required to access their eBook online in the Pearson Learning Studio. This online portal will also be used regularly to complete assignments (Document Sharing, Threaded Discussions, Webliography Postings, etc.). A detailed syllabus can be found online.

1) **Make sure to always have access to a functioning computer.** If, for example, your home computer experiences problems, it is your responsibility to find another computer (on campus, at any public library, a friend's house, etc.). Exceptions may be made by the instructor in case of a large-scale event affecting ASU's computer network (checked at <http://syshealth.asu.edu/>). Exceptions will not be made for routine computer problems.

2) **Demonstrate good time management skills.** The assignments are not set up to be completed at the last minute. You will be more successful if you pace yourself and give yourself enough time to produce quality work.

3) **Always read and follow directions.** It is important that you understand the instructions before attempting each assignment. In many cases, you will be asked to meet a word minimum.

4) **Reread, edit and revise every piece of writing before submitting.** There is a strong emphasis on writing in this course. As a result, one of the overriding objectives of the course is to guide you into becoming a stronger writer. The grades for each assignment will reflect both the command of class content, as well as the quality of writing.

5) **Always cite material** that you use from other sources. Please use the APA citation format for all assignments. Assignments utilizing outside resources that are not cited will receive a failing grade. **All assignments should be written in formal standard English. If you cannot figure out how to formally cite a source, then make sure you put the source in a parenthesis after the quote so you will at least get some credit.** The ASU Library page has resources for citation and style sheets.

Plagiarism is stealing. Whenever you borrow a phrase, sentence, paragraph—or even an idea stated in your own words—from any outside source (news writing, magazine, TV show, book, fellow student) without giving credit to that source, you have plagiarized. Plagiarism is cheating yourself and someone else. The consequences are severe, including failure for the assignment, probable failure for the course, disciplinary referral to the dean, and possible expulsion from the university. I randomly select work to run through a plagiarism checker. Academic integrity is expected of every individual in the university (see <http://www.asu.edu/vpsa/studentlife/>). If you have any questions about how to acknowledge someone else's words or ideas, see me.

IF YOU PLAGIARIZE THE WORK OF ANOTHER STUDENT IN THIS CLASS FOR ANY REASON I WILL REQUEST A FINAL GRADE OF XE (FAILURE FOR ACADEMIC DISHONESTY), AND IF APPROVED IT WILL BECOME PART OF YOUR PERMANENT TRANSCRIPT.

**6) Finally, students are also expected to treat each other and the instructor with respect.** Please understand that some of the content of this course may be considered sensitive or controversial. Students are not required to agree with the authors, other students, or the instructor. Students are required, however, to communicate disagreement with thoughtful and reasoned arguments that are informed and respectful. Sensitivity and respect are imperative.

#### **ASU RESOURCES TO HELP YOU BE SUCCESSFUL:**

**Academic integrity**—see the student affairs web page at <http://www.asu.edu/studentaffairs/studentlife/judicial/> and <http://provost.asu.edu/academicintegrity> as well as the School of Letters and Sciences web page <http://sls.asu.edu/bis/forms.html> for policies to which we adhere.

**Plagiarism**—[http://library.umf.maine.edu/plagiarism/is\\_it.html](http://library.umf.maine.edu/plagiarism/is_it.html) This web site from the University of Maine has some excellent links and allows you to take a short quiz with quick feedback.

**Citing sources**—The following online sources are useful if you have any questions on how to properly cite a source.

[http://www.wisc.edu/writing/handbook/docapacitations\\_def.html](http://www.wisc.edu/writing/handbook/docapacitations_def.html)

[http://www.lib.duke.edu/libguide/cite/works\\_cited.htm](http://www.lib.duke.edu/libguide/cite/works_cited.htm) .

University of Wisconsin Writing Center, "writer's handbook: documentation styles," pp. 1-2 (of 5), <http://www.wisc.edu/writing/handbook/documentation.html>.

**ASU libraries** - offers 24/7 access to librarians through "ask a librarian" online chat and help by librarians in person at the reference desk during most hours the libraries are open. [www.asu.edu/lib/](http://www.asu.edu/lib/)

**E-mail issues** – be sure to check ASU email or have it forwarded properly to a different account. Problems? Check these sites and then call one of the numbers below if you aren't sure. <http://help.asu.edu/> and <http://help.asu.edu/node/99> and email to [email-q@asu.edu](mailto:email-q@asu.edu)

**Accommodations for disabilities** – the Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. One element of this legislation requires that all qualified students with documented disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you believe you have a

disability requiring an accommodation please contact the disability resource center in Student Affairs or visit their web site. Eligibility and documentation policies online: <http://www.asu.edu/studentaffairs/ed/drc/>

**Counseling and Consultation** – provides confidential mental health and career counseling services for all ASU students. <http://students.asu.edu/counseling>

**Student success centers** – the Student Success Center (SSC) on each ASU campus provides an array of support services that promote students' academic success. The SSC supports classroom instruction by helping students become better learners and gain the confidence and skills to achieve their greatest possible academic success. <http://studentsuccess.asu.edu/>

**Career services** – offers assistance to students in choosing a major, setting career goals, interviewing and job hunting strategies. <http://students.asu.edu/career> It never hurts to get a good start on career planning as we all need jobs sooner than later!

**Student financial aid office** – offers information and applications for student funding such as grants, loans, scholarships and student employment. <http://students.asu.edu/financialaid>

**Student legal assistance** – provides legal advice and counsel free of charge to all ASU students in areas such as landlord-tenant law, credit reports and collection issues, taxability of scholarships and grants, etc. Notary service is also available at no charge. <http://www.asu.edu/studentaffairs/mu/legal/>

**Help wiki** – provides a frequently asked questions resource for technology users at ASU. <http://wiki.asu.edu/help/>

**Empact crisis hotline** – offers free 24-hour support for mental health crises. Call (480) 784-1500 in the phoenix area, (866) 205-5229 for the toll-free number outside of Phoenix, and (480) 736-4949 for the sexual assault hotline. All services are free and confidential. <http://www.empact-spc.com/>

**Faculty:** Christopher Wishon  
PSYN 150  
[cwishon@asu.edu](mailto:cwishon@asu.edu)

Dr. John Fowler  
BA 401A, (480) 965-4330  
[John.Fowler@asu.edu](mailto:John.Fowler@asu.edu)

**Course Overview:** The ability to analyze complex information and make high quality decisions is critical for managers. It is no longer enough to rely on intuition or common sense. Decision tools such as optimization, decision trees, and simulation enable us to analyze problems and provide high quality solutions. Additionally, we will study how to ensure that these solutions work in a wide variety of situations (what if analysis).

*Note: this online course is taught over 7.5 week format and will progress very quickly. Online courses are not easier than face-to-face courses; in fact, the opposite tends to be true. To succeed in this course it is imperative that you have the necessary study skills. Successful students will not procrastinate. They will be self-motivated, follow directions well, possess good organizational skills, have a basic amount of competency in the area of computer technology, and can read and comprehend the course materials without the help of face-to-face meetings in a classroom setting. Reading the textbooks and completing homework is critical to succeed in the course. At the end of the semester, it is anticipated that each student will exhibit a thorough and comprehensive understanding of the course material.*

### Course Objectives

#### *General Objectives*

- Develop your ability to approach problems using a systematic, analytical process.
- Improve your ability to simplify complicated situations using math models.
- Improve your overall quantitative and spreadsheet skills.
- Understand the role of a decision analyst within a supply chain context.

#### *Specific Objectives*

- Be able to structure problems in Excel.
- Be able to use Excel and other tools to visually describe data patterns.
- Be able to formulate optimization problems in Excel.
- Be able to implement and understand introductory data mining techniques
- Understand how to interpret Excel output to do sensitivity analysis.
- Be able to structure problems with uncertainty in a decision tree.
- Be able to solve decision tree problems and conduct sensitivity analysis.
- Be able to structure problems with uncertainty using Monte Carlo Simulation.

The Undergraduate Program of the W.P. Carey School of Business has established the following learning goals for its graduates (items in bold have significant coverage in this course):

- **Critical Thinking**
- Communication
- **Discipline Specific Knowledge**
- Ethical Awareness and Reasoning
- Global Awareness

- Prerequisites:** *Fundamental knowledge of Global Supply Operations (SCM 300). You are expected to be proficient in word processing, slide presentations, and spreadsheet packages.*
- Virtual e-Lab:** *An e-Lab will be held twice each week. The day and time of these sessions is listed on Blackboard. These e-Labs can be used to get instant feedback and answers to questions regarding the course material, homeworks, practice problems, etc.*
- Course Materials:** *Business Analytics, Evans, McGraw Hill (1<sup>st</sup> Edition or 2<sup>nd</sup> Edition).*
- Access to a computer will be required to complete the course. Either a PC, Mac or Linux-based computer is sufficient so long as the computer has internet access.
- The myASU (Blackboard) site contains the syllabus, assignments, lecture notes, and videos for the course. You are responsible for all material posted in this site and should check the announcements and discussion boards daily.
- Grades:**
- |   |      |
|---|------|
| Quizzes (7 in total, lowest will be dropped)              | 300  |
| Homework Assignments (7 in total, lowest will be dropped) | 300  |
| Final Exam  | 400  |
| Total Possible Points                                     | 1000 |
- Final grades will not use the +/- system. Therefore 1000 – 900 is an A, 899 – 800 is a B, etc. A curve may be applied if needed, but *do not* expect a curve. If one is applied, it is typically small.
- Submission policy:** All graded work with a specified due date must be submitted in electronic format (through blackboard) by the indicated date and time.
- Any assignment that is turned in after the due date but within 24 hours after the time of submission will receive a 20% penalty. Any assignment turned in after the 24 hours threshold may be graded for feedback purposes, but will receive a zero.**
- Plagiarism policy:** According to the Arizona Board of Regents, Plagiarism is “intentionally or knowingly representing the words or ideas of another as one's own in any academic exercise.”
- For some assignments, Safe Assignment will be utilized to assess papers. Any paper with a matching score of 20% or higher will receive a score of 0. Any papers with matching scores between 0 and 20% will be evaluated for major deductions. For all other assignments, please be aware that I will be manually looking for plagiarism and the above will also apply. Note that Safe Assignment compares your submission to all other submissions from this semester as well as all prior semesters.
- Please be sure all work is your own!

**Regrading policy:**

When assignment grades are posted, you will have one week to resubmit the assignment for regrading (or let me know if there is a posting error). You must also electronically submit a memo describing the reason(s) for the regrade.

Please note: when you submit a regrade, the problem will be *entirely* regraded, which means that it is possible you will *lose* points as a result of the submission.

**Quizzes:**

Each week will have a quiz to test your comprehension of the course material. These quizzes are designed to ensure that all students are putting in the required effort with respect to the videos, readings, and homeworks. Each quiz will feature multiple questions and will test both your comprehension and technical understanding of the course material through both multiple choice, short answer, and calculation based questions. It is advised to complete the quizzes once you feel comfortable with that week's material.

The quizzes will be administered via blackboard. They must be completed individually. Please do not work with other students to complete these quizzes. Any students who violate this policy WILL be subject to the Academic Integrity sanctions listed below.

**Homework:**

Every week will have a graded homework assignment to test your technical understanding of the material. This homework has due dates indicated on the assignment and will be graded and returned as soon as possible.

Homeworks can be completed as a group or individually. Groups can have at most three members and students must self-select to join together in groups for the homework. There is a discussion board on Blackboard to assist students in finding other group members. Once you have a group, notify the TA so they can combine you on Blackboard. If the homework is completed as a group, please ensure all group member's names are listed on the homework and only one homework needs to be uploaded per group.

**Academic Integrity &  
Ethical Behavior:**

The W. P. Carey School takes academic integrity very seriously. Therefore, unless otherwise specified, it is imperative that you do your own work. Any suspected violations of academic integrity will be taken seriously and result in the following sanctions:

- A minimum of zero on the assignment OR
- A reduced grade in the course OR
- A failure in the course OR
- An XE which denotes failure due to academic dishonesty on the transcript OR
- Removal from the W. P. Carey School of Business

Additional information on ASU's academic integrity policy may be found at <http://provost.asu.edu/academicintegrity>

**Religious Accommodations:**

Accommodations will be made for students with religious holidays. Below is the calendar of official religious holidays.

<https://provost.asu.edu/index.php?q=religious-holiday-calendar>

Each holiday noted with two asterisks denotes an observance for which work is not allowed. For these holidays, students will not be penalized in any way for missing class or assignment. This means that this will not count as an absence in class and they will be granted a makeup assignment or exam, etc.

**University Sanctioned  
Activities**

Accommodations will be made for students who miss class related to university-sanctioned activities according to ACD 304-02. If you are participating in a university-sanctioned activity, please let your instructor know as early in the course as possible so that accommodations can be made.

**Tutoring Support**

The W. P. Carey School of Business provides free tutoring in BA 201 for a number of undergraduate business classes. Assistance with writing is also provided.

More information regarding courses offered and hours are available here:

<https://my.wpcarey.asu.edu/undergrad/student-success/success-center.cfm?>

**Threatening Behavior Policy**

The university takes threatening behavior very seriously and these situations will be handled in accordance with the Student Services Manual, SSM 102-02 <http://www.asu.edu/aad/manuals/ssm/ssm104-02.html>.

**Special Challenges:**

If you are challenged in any way -- sight, hearing, mobility, learning, language or other -- please let me know so that we can plan together how best to meet those challenges so that your learning opportunities are as equitable as possible.

- Asking Questions:** I strongly encourage you to ask questions throughout the course. There is no reason to be stuck on something for two hours when a little bit of guidance can make the task take 10 minutes.
- However, for any assignment that is turned in for credit, I can not preview work to see if it is “on the right track” or “looks ok”. I also will not confirm if specific calculated values are correct. I will however answer questions such how to set up a problem or how to use a specific methodology. If you feel yourself getting stuck, please feel free to ask questions such as these!
- English Language:** All written materials submitted for a grade are expected to use correct grammar, spelling and punctuation.
- Changes to Syllabus** Any changes to this schedule, these assignments, or these policies will be announced in class, on the website, or by email.

**Class Schedule**

<i>Week</i>	<i>Date</i>	<i>Topic</i>	<i>Reading</i>
1	8/18/2016 – 8/24/2016	Introduction and Foundations of Decision Modeling, Basic Excel Concepts	1 <sup>st</sup> Ed: Chapters 1 - 3 2 <sup>nd</sup> Ed: Chapters 1 - 3
2	8/25/2016 – 8/31/2016	Intermediate Excel Concepts, Excel Visualization, Tableau Visualizations	1 <sup>st</sup> Ed: Chapters 2 - 3 2 <sup>nd</sup> Ed: Chapters 2 - 3
3	9/1/2016 – 9/7/2016	Introduction to Data Mining	1 <sup>st</sup> Ed: Chapter 12 2 <sup>nd</sup> Ed: Chapter 10
4	9/8/2016 – 9/14/2016	Introduction to Linear Programming	1 <sup>st</sup> Ed: Chapters 13 - 14 2 <sup>nd</sup> Ed: Chapters 13 - 14
5	9/15/2016 – 9/21/2016	Linear Programming Sensitivity Analysis, Integer and Nonlinear Programming	1 <sup>st</sup> Ed: Chapters 13 - 14 2 <sup>nd</sup> Ed: Chapters 13 - 14
6	9/22/2016 – 9/28/2016	Decision Trees	Supplemental Readings
7	9/29/2016 – 10/5/2016	Predictive Modeling, Simulation Models	1 <sup>st</sup> Ed: Chapters 8 & 11 2 <sup>nd</sup> Ed: Chapters 11 & 12

<b>Faculty:</b>	Christopher Wishon BA 4 <sup>th</sup> Floor SCM Department Office Hours: T/Th 12:00 – 1:15 <a href="mailto:cwishon@asu.edu">cwishon@asu.edu</a>	Dr. John Fowler BA 401, (480) 965-4330 Office Hours: By Appointment  <a href="mailto:John.Fowler@asu.edu">John.Fowler@asu.edu</a>
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Note: this course will progress very quickly. It is advisable to stay up with the required reading and to be prepared for each and every class session. Classroom discussions will focus on the key concepts of assigned chapters. At the end of the semester, it is anticipated that each student will exhibit a thorough and comprehensive understanding of the course material.

### Course Objectives

#### *General Objectives*

- Develop your ability to approach problems using a systematic, analytical process.
- Improve your ability to simplify complicated situations using math models.
- Improve your overall quantitative and spreadsheet skills.
- Understand the role of a decision analyst within a decision context and how to present results.

#### *Specific Objectives*

- Be able to structure problems in Excel.
- Be able to use Excel and other tools to visually describe data patterns.
- Be able to formulate optimization problems in Excel.
- Understand how to interpret Excel output to do sensitivity analysis.
- Be able to structure problems with uncertainty in a decision tree.
- Be able to solve decision tree problems and conduct sensitivity analysis.
- Be able to structure problems with uncertainty using Monte Carlo Simulation.
- Be able to solve problems using stochastic optimization.

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- The myASU (Blackboard) site contains the syllabus, assignments, and lecture notes for the course. You are responsible for all material posted in this site and should check the announcements and discussion boards daily.
- Grades:**
- |   |             |
|---|-------------|
| Visualization Project (Team)                          | 150         |
| Capstone Project (Team)                               | 200         |
| Peer Evaluation (Team)                                | 50          |
| Quizzes (Individual, 9 total, drop 1, 40 points each) | 320         |
| Midterm (Individual/Team)                             | 80          |
| Final (Individual)                                    | 200         |
| <b>Total Possible Points</b>                          | <b>1000</b> |
- Final grades will not use the +/- system. Therefore 1000 – 900 is an A, 899 – 800 is a B, etc. A curve may be applied if needed, but *do not* expect a curve. If one is applied, it is typically small.
- Submission policy:** All graded work with a specified due date must be submitted in electronic format (through blackboard) by the indicated date and time. If the submitted work is a group assignment, the name of your team, team members, and assignment name is required.
- Any assignment that is turned in after the due date but within 24 hours after the time of submission will receive a 20% penalty. Any assignment turned in after the 24 hours threshold may be graded for feedback purposes, but will receive a zero.**
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**Special Challenges:**

If you are challenged in any way -- sight, hearing, mobility, learning, language or other -- please let me know so that we can plan together how best to meet those challenges so that your learning opportunities are as equitable as possible.

<b>Class Participation</b>	<p>None of your grade is based on class participation. However, I strongly encourage you to ask questions throughout the course. There is no reason to be stuck on something for two hours when a little bit of guidance can make the task take 10 minutes.</p> <p>However, for any assignment that is turned in for credit, I cannot preview work to see if it is “on the right track” or “looks ok”. I also will not confirm if specific calculated values are correct. I will however answer questions such how to set up a problem or how to use a specific methodology.</p>
<b>Attendance for Exams, Guest Lectures, and Presentations:</b>	<p>You are expected to be present for each lab session, as a graded activity will occur during most lab sessions (you may drop one graded activities).</p> <p>Requests for absences for exams and class presentations must occur at least 24 hours prior class start (other than sudden events such as illness or injury). Any absences for sudden events must be made up within the week following the absence. Requests will be granted only for those in very challenging situations or for job/internship related reasons. Each request will be handled on a case-by-case basis.</p> <p>Failure to notify the instructor PRIOR to the final exam will result in a 0. Failure to notify the instructor prior to a class presentation could result in a 0 for your project presentation.</p>
<b>English Language:</b>	<p>All written materials submitted for a grade are expected to use correct grammar, spelling and punctuation.</p>
<b>Changes to Syllabus</b>	<p>Any changes to this schedule, these assignments, or these policies will be announced in class, on the website, or by email.</p>
<b>Course Software</b>	<p>This course requires software that must be installed on a Windows platform. If you have a Mac, please visit <a href="https://students.wpcarey.asu.edu/resources/using-mac-w-p-carey-school-business">https://students.wpcarey.asu.edu/resources/using-mac-w-p-carey-school-business</a> for information on how to install Windows based software on your computer. It is recommended that you ensure that your computer is set up with Bootcamp or Parallels prior to the first day of class. Citrix is also available for those students who do not wish to install a Bootcamp or Parallels.</p>
<b>Team Dynamics:</b>	<p>A large percentage of this class is based upon team work. If you feel your team is becoming dysfunctional, please tell the instructor as soon as the problem begins. Team issues will be handled on a case-by-case basis.</p> <p>A grade for any team-based assignment/project will not be adjusted if team issues are brought up after the grade is administered.</p>

## Class Schedule

<i>Class</i>	<i>Tuesday Class Date</i>	<i>Thursday Class Date</i>	<i>Topic</i>
<b>1</b>	8/23/2016	8/25/2016	Introduction and Foundations of Decision Modeling
<b>2</b>	8/30/2016	9/1/2016	Excel Introduction
<b>3</b>	9/6/2016	9/8/2016	Tableau Introduction - QUIZ
<b>4</b>	9/13/2016	9/15/2016	Predictive Modeling - QUIZ
<b>5</b>	9/20/2016	9/22/2016	Introduction to Data Mining - QUIZ
<b>6</b>	9/27/2016	9/29/2016	Visualization Project Presentations - QUIZ
<b>7</b>	10/4/2016	10/6/2016	<b>MIDTERM</b> Introduction to Linear Programming
<b>8</b>	10/18/2016	10/13/2016	Introduction to Linear Programming
<b>9</b>	10/25/2016	10/20/2016	Integer and Nonlinear Programming - QUIZ
<b>10</b>	11/1/2016	10/27/2016	Linear Programming Sensitivity Analysis - QUIZ
<b>11</b>	11/8/2016	11/3/2016	Decision Trees - QUIZ
<b>12</b>	11/15/2016	11/10/2016	Simulation Models
<b>13</b>	11/22/2016	11/17/2016	Simulation Models - QUIZ
<b>14</b>	11/29/2016	12/1/2016	Modeling Under Uncertainty - QUIZ
<b>FINAL</b>	Final Exams will be held during Exam Week, see Blackboard for date/time		