



THE OHIO STATE UNIVERSITY

FISHER COLLEGE OF BUSINESS

Applied Financial Software Applications – 7200 Autumn Semester – 2019¹

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Wednesday 3 p.m. – 4 p.m.

Course Topics and Goals

For most of us, we entered our Graduate program armed with our most trusted tool, the financial calculator. Whether your choice was the HP 12C, Sharp EL 733A or a running favorite the TI BA II Plus, chances are that you probably did not make it past the first chapter in the user manual. Static homework problems are solved with ease, balancing checkbooks after purchasing books (though depressing) are accomplished with a modicum of effort. It is generally not until that first HBS case, where you are forced to consider dynamic variables and perform sensitivity analysis, that you realize there is a time and place for the financial calculator. With the clock approaching 11pm and two additional cases due in 8 hours, it becomes apparent that a comprehensive set of tools are needed to analyze the case data. As fatigue and panic begin to set in, a confident teammate whom was in the two year analyst program at Morgan Stanley prior to grad school, steps to the “plate” and deftly places the mouse aside. After 10 minutes of steady chatter from the keyboard, a robust and neatly formatted spreadsheet provides the first tool necessary to model various inputs that were swiftly downloaded from a nearby Bloomberg terminal representing a second tool. Finally, a third tool, Crystal Ball by Oracle is used in the forecasting and simulation of the data at hand to augment team discussion and provide sensitivity analysis of the case at hand. A well thought out decision soon follows and it is only 12am! A typical team will stand there mystified, with a silent and unspoken agreement that they just found their finance, data and excel guru for the rest of their graduate studies!

Fast forward a year or two. Graduation has come and gone. The debt is there, but at least you are driving a new car and going to the gym to work off the “Grad School 20.” You are a financial analyst at a fortune 500 company. The two week training class offered by the firm was insightful and now you are on your own. Your boss comes in and asks you to put together an analysis surrounding an NPV project. Key requirements include a financial model detailing five year pro formas, working capital requirements and the ability to perform sensitivity analysis given a set of dynamic variables that will have to be skillfully adjusted to meet the appropriate cost of capital that needs to be compared to industry peers. As you begin to break out in a sweat, the last words you vaguely recall hearing are something about a two day deadline...

For nearly 40 years with the advent of the PC, spreadsheet models have been the dominant tool for finance professionals to practice their trade. Bloomberg has become the preeminent tool for market news, data, analysis, and video to the business world. Oracle’s Crystal Ball is often touted as the leading spreadsheet-based application for predictive modeling, forecasting, simulation, and optimization. This course will utilize Excel, Bloomberg, Capital IQ and Crystal Ball to challenge the

¹ Professors Oglevee and Sheridan may change the course schedule if necessary. Any changes made will be announced in class with sufficient advance notice and a revised syllabus will be posted on the course website.

student to improve their finance, data gathering, and modeling skills by personally constructing a variety of spreadsheet models. The student who puts in the effort to not only complete the models, but analyze the key market data and simulation components will:

- Gain a practical understanding of the core concepts surrounding data/sensitivity analysis
- Develop hands-on spreadsheet modeling and Market Data skills
- Develop hands on Bloomberg, Capital IQ and Crystal Ball simulation skills
- Augment their ability to make assumptions and deal with imperfect information
- Build a variety of models and market data competencies which they fully understand and can explain in an interview!

Course Format

Given the sheer number of group cases/projects and Excel/Bloomberg tutorials that need to be completed on an individual basis, this course will be run more as a seminar and independent study rather than a pure “lecture/discussion” course. The use of Wall Street Prep and Bloomberg online readings do a great job on presenting how to construct various models and use Bloomberg. The lectures will be staged throughout the term to either expand on your readings or provide insight into various Excel, Bloomberg, Capital IQ and Crystal Ball topics that are not covered in Wall Street Prep or the Bloomberg online readings/tutorials.

The course will be divided between two modules, Excel Modeling and Market Data. Students will be assigned a number of tutorials from Wall Street Prep and Bloomberg to be done on an individual basis. In addition, you will be required to work on a number of group cases and a prepare a module ending group project where each team will present a demo of their model along with commentary regarding the business case and the technical approach taken not only in the design of the model, but your analysis and subsequent recommendation.

Course Materials

- (1) **Wall Street Prep (WSP) a link to access the material will be provided on Carmen/Canvas.** Please note, Wall Street Prep has made a special allowance for OSU students to purchase the Excel Crash Course, DCF Modeling and Financial Statement Modeling programs for \$95 a student. This will be a great resource for you going forward into your professional career. Quizzes in the Excel Crash Course will not be graded. However, a final exam encompassing all of the Excel Crash Course material will be given at the end of the completed tutorials. Completing all of the Wall Streep Prep tutorials and exams is vital to your understanding and mastering of excel.
- (2) **Bloomberg Market Concepts (BMC) a link to access the material will be provided on Carmen/Canvas.** Please note, as long as you complete the certification on a Bloomberg terminal, there is no cost to the BMC certification which is an 8 hour self-paced e-learning course that provides a visual introduction to the financial markets. BMC consists of 4 modules – Economics, Currencies, Fixed Income and Equities – woven together from Bloomberg data, news, analytics and television.
- (3) *A detailed outline of course content and assignments for each session can be found online at the Carmen/Canvas website for the course.*

Other Sources

There will be some occasional handouts in class. One of the best sites and authors of Excel books can be found at <http://www.spreadsheetpage.com>. I also strongly encourage students to thumb through the following books at a bookstore and purchase those books that are appropriate to your developing skill set and interests with Excel. **Remember to check for the most recent edition.**

- John Walkenbach's Excel 2013 Tips, Tricks and Timesavers
- Excel 2016 Formulas, John Walkenbach
- Excel 2016 Bible, John Walkenbach
- Excel 2007 Charts, John Walkenbach
- Principles of Finance with Excel, Simon Benninga

Class Attendance

Students are expected to **attend class** and to **arrive on time**. YOU ARE RESPONSIBLE for announcements in class; consult a colleague if you are absent.

E-mail Communication

If it is necessary to communicate with the class between class sessions, I will send e-mail and/or update Carmen/Canvas. I will assume that you check both your e-mail and Carmen/Canvas at least once every 24 hours or talk to another Bus-Fin 7200 classmate who does check their e-mail or Carmen/Canvas daily.

Grading

Plus/Minus grades may be given. There are no exams in this course. Grades will be determined as follows:

Wall Street Prep Exams (2 of 3)	20%
Bloomberg Certification/BMC	10%
Cases (4 out of 5)	25%
Final Project	35%
Class Attendance/other Assignments	5%
Peer Review	5%
Total	100%

Students are required to hand in both a hard and electronic copy of all assignments unless noted otherwise. Hard copy should include a properly formatted memo. The electronic copy of your models should be submitted to the appropriate Carmen/Canvas dropbox. Each student is responsible for doing his or her own work. **Anyone found to be submitting someone else's work will receive a zero and be subject to academic misconduct.** You can only learn if you do the assignments yourself. Do not get behind!

Cases

Over the course of the semester, there will be five case assignments but only four will be used in your final grade. Please note, we will drop your lowest case score.

Teams

Teams of five should be formed by the end of the first class with team members listed in a memo to the instructors. Formation of teams will be left to your discretion, but we encourage you to include some variety in terms of gender, ethnicity, nationality, work experience, etc. If you need motivation beyond the opportunity to learn from classmates with different experiences, recognize that the teams you work with on the job usually include such diversity. It is wise to have at least one team member who is a native English speaker, to help ensure that your memos, cases and final project are written clearly. It is further in everyone's best interests to start on the final project early. Waiting until the last minute will surely prove stressful and minimize the learning experience that can be derived from the project.

Teams are encouraged to meet with the instructors during the course to address the progress of the final project and/or any issues that a team may be having i.e., report format. The class presentation should be no more than 15 minutes (teams will be allocated a 2 minute setup time) and presented in a professional manner using PowerPoint. At this stage of your professional and educational career, the instructor expects a polished work product (i.e., the presentation, excel model and written report) and will grade accordingly. At a minimum, the presentation should include a demonstration of the model and dialog regarding the business case, assumptions and modeling techniques employed. Remember, teams are competing against one another and the competition can be steep.

Peer Review

One bothersome aspect of group work is that it is difficult for the instructors to assess each individual's contribution to the team's output, and this may tempt some students to free ride on the efforts of their teammates. Peer review will be used to allow students to provide useful information about teammate contributions, to help avoid the free-rider problem and, if some students bear more than their share of the load, to reward those students. Each student will have a total of 200 points to award to the other members of his or her team. The points that you allocate should be proportional to the individual's contribution to your team during the course, as you perceive it. For example, if you think that Teammate A contributed twice as much as Teammate B, then Teammate A should get twice as many points as Teammate B. Since each student awards 200 points to teammates, the average expected score received from peer review is also 200 points.

The peer review forms will be completed at the end of the course. The form must be signed (it is not anonymous), but will be kept *confidential*. That is, students may be told the total number of points awarded to them by their teammates, but they will not be told the points given by individual teammates. Since peer review is an important component of course grades, please take this responsibility very seriously—a frank and honest evaluation is expected.

Instructor Judgment

Grading is more subjective in this course than in many Finance courses, and we want to make sure everyone understands this clearly up front. We strive diligently to be fair and impartial when making judgments regarding quality of work, professionalism and creativity as compared to others, but it is a fact of life that the judgments must be made.

Course Outline

Dates in the course outline are approximate and subject to change with appropriate notice. **Lecture/Team Presentations are in bold face.** In order to receive credit, all models must be fully constructed, printed and uploaded to the appropriate dropbox by the normal class time on the posted due date. Printed assignments should also be handed in at the beginning of class on the posted due date. Given the sheer volume of the assignments and in fairness to those who turn their assignments in on time, **there will be no exceptions** and late assignments will receive a zero for submission. Please do not wait to the last minute. In fact, to borrow from marketing and the rule of three:

Do not wait to the last minute.

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Online Book Legend: WSP (*Wall Street Prep*)

<u>Week 1 Beginning (01/06)</u>	<u>Assignments</u>	<u>Due</u>
Lecture 01 – Modeling Introduction		01/08
Lecture 02 – Menu Page WSP – Excel Crash Course	CH 1 – CH 3	01/10
<u>Week 2 Beginning (01/13)</u>	<u>Assignments</u>	<u>Due</u>
Lecture 03 – Number Formatting		01/15
Lecture 04 – Style Formatting and Case 1 Presentations <i>Case 1: Class Analysis</i> WSP – Excel Crash Course	CH 4 – CH 9	01/17
<u>Week 3 Beginning (01/20)</u>	<u>Assignments</u>	<u>Due</u>
Lecture 05 – Document Formatting/Printing with Excel WSP – DCF Modeling	CH 1 – CH 4	01/22
Lecture 06 – NPV and IRR Using Excel WSP – DCF Modeling	CH 5 – CH 8	01/24
<u>Week 4 Beginning (01/27)</u>	<u>Assignments</u>	<u>Due</u>
Lecture 07 – Guest Lecturer – Thanh Nguyen (VBA – Part I)		01/29
Lecture 08 – Guest Lecturer – Thanh Nguyen (VBA – Part II) WSP – Financial Statement Modeling	CH 1 – CH 4	01/31

<u>Week 5 Beginning (02/03)</u>	<u>Assignments</u>	<u>Due</u>
Lecture 09 – Two Variable Data Tables, Lookup Tips		02/05
Lecture 10 – Case 2 Presentations		02/07
<i>Case 2: Gas Analysis</i>		
WSP – Financial Statement Modeling	CH 5 – CH 6	
<u>Week 6 Beginning (02/10)</u>	<u>Assignments</u>	<u>Due</u>
Lecture 11 – Guest Lecturer – Ralph Greco (Real Time Analytics Using Excel)		02/12
WSP – Financial Statement Modeling	CH 7 – CH 9	
Lecture 12 – Excel Tips and Tricks		02/14
WSP – Financial Statement Modeling	CH 10 – CH 13	
<u>Week 7 Beginning (02/17)</u>	<u>Assignments</u>	<u>Due</u>
Lecture 13 – Pro formas		02/19
Lecture 14 – Case 3 Presentations		02/21
<i>Case 3: Honda Pilot</i>		
Final Work Products Due		
WSP	Excel Crash Course	Final Exam 02/21
WSP	DCF Modeling	Final Exam 02/21
WSP	Financial Statement Modeling	Final Exam 02/21
<u>Week 8 Beginning (02/24)</u>	<u>Assignments</u>	<u>Due</u>
MBA Final Exams – No Class		02/26
Lecture 15 – Current State of the Financial Markets Illustrated by Market Data		02/28
<u>Week 9 Beginning (03/03)</u>	<u>Assignments</u>	<u>Due</u>
Lecture 16 – Bloomberg Introduction: Navigation and News		03/05
Lecture 17 – Bloomberg: Industry & Equity		03/07
<u>Week 10 Beginning (03/10)</u>		
Spring Break – No Class		

<u>Week 11 Beginning (03/17)</u>	<u>Assignments</u>	<u>Due</u>
Lecture 18 – Bloomberg: Fixed Income & Economics		03/19
Lecture 19 – Industry & Company Analysis Project Presentations <i>Case 4: Industry & Relative Value Analysis</i>		03/21
<u>Week 12 Beginning (03/24)</u>	<u>Assignments</u>	<u>Due</u>
Lecture 20 – Investing & Fund Analysis		03/26
Lecture 21 – Morningstar <i>Bloomberg Market Concepts Certification Due on March 31st</i>		03/28
<u>Week 13 Beginning (03/31)</u>	<u>Assignments</u>	<u>Due</u>
Lecture 22 –Bloomberg: Portfolio Analytics, FX, & Commodities		04/02
Lecture 23 – Capital IQ		04/04
<u>Week 14 Beginning (04/07)</u>	<u>Assignments</u>	<u>Due</u>
Lecture 24 – 401K Mutual Fund Evaluation Project Presentations <i>Case 5: Fund Evaluation</i>		04/09
Lecture 25 – Thomson Reuters & Bloomberg: API for Excel		04/11
<u>Week 15 Beginning (04/14)</u>	<u>Assignments</u>	<u>Due</u>
Lecture 26 – Oracle Crystal Ball		04/16
Please Submit in Class a Hardcopy	Final Project	04/16
Please Submit in Class a Hardcopy Only	Key Lessons Learned	04/16
Please Submit in Class a Hardcopy Only	Peer Review	04/16
Wrapping it all up & Final Project Presentations		04/18

Administrative Points or “The Fine Print”

Notification of Scores and Final Grades: The results of any graded materials, including final grades, WILL NOT be given by the instructor to individual students via phone, US post, e-mail, or verbally in person.

Materials submitted for grading throughout the course will be returned to students generally within one week after submission. Students with invalid absences on the return date must retrieve their materials at the instructor’s office.

Students may obtain their final grades online by accessing the University Registrar link.

Disability Services: The Office of Disability Services verifies students with specific disabilities and develops strategies to meet the needs of those students. Students requiring accommodations based on identified disabilities should contact the instructor at the beginning of the course to discuss his or her individual needs. All students with a specific disability are encouraged to contact the Office of Disability Services to explore the potential accommodations available to them.

Appeals: Grading errors should be corrected. Appeals must be in writing within two weeks after the graded work is made generally available—not the date you first look at it. If the end of term is within the two-week period, the two weeks will start at the beginning of the next semester. In general, the entire document will be checked for grading errors, and correcting these could either raise or lower the overall score.

Academic Misconduct: Cheating is grounds for failing the course and additional sanctions. In accordance with Faculty Rule 3335-31-02, all instances of alleged academic misconduct will be reported to the Committee on Academic Misconduct, which recommends appropriate sanctions to the Office of Academic Affairs.

Absences & Make-Ups: In general, work related conflicts or overlapping requirements due in other classes are NOT valid excuses for missing assignments. In cases of valid family, health or safety emergencies, students must contact the instructor PRIOR to the assignment deadline. Unexcused absences will result in a grade of zero (0) for any missed assignments.

It is the sole responsibility of absent students to obtain any missed class notes, handouts, etc. In general, the instructor will not provide missed handouts to absent students during subsequent class periods. In addition, the instructor will generally not discuss missed material with an absent student until that student can provide evidence that (s)he has worked diligently at understanding the material missed.

Waitlisted Students: Students who are waitlisted and seek to enroll must attend class through the first class session of the second week of the semester/term. After that date, students who have not been added will not be enrolled and may not continue to attend the class. Waitlisted students should contact either the Fisher Undergraduate Program Office or the Department of Finance office if they have any questions regarding the waitlist process.

Disenrollment: University Rule 3335-8-33 provides that a student may be disenrolled after the third instructional day of the semester/term, the first Friday of the semester/term, or the student’s second class session of the course, whichever occurs first, if the student fails to attend the scheduled course without giving prior notification to the instructor.