

Finance
Course Number: 22:390:680
Course Title: Financial Modeling for Corporate & Project
Finance

COURSE DESCRIPTION

This is an advanced, modern finance course with the objective of studying valuation and financial modeling in Microsoft Excel and their application in Equity Research and Investment Banking. In this course students will learn how to utilize Microsoft Excel to create a fully functioning 3-statement (income statement, balance sheet and cash flow statement) financial model with historical and projected data. The course will culminate in a discounted cash flow (DCF) valuation. Due to the hands-on nature of this course, attendance is critical. The objective is to be at a level of proficiency where you can take the annual report of any company, input its historical financials, project future financials and create a DCF valuation. Students will also learn to put together trading & transaction comparables and compute key ratios to determine a company's financial condition. We will also look at how to analyze an individual project by looking at NPV, IRR and Payback methods.

The course is designed to be comprehensive covering the topics of Valuation and Financial Modeling, while being contemporary and practical with the content and looking at current events in the financial world and market to address the impact of these events on firms and their intrinsic value. Class time will be used to provide students hands-on experience and the ability to create financial models which include income statements, balance sheets and cash flow statements for forecasting and investment evaluation purposes very similar to Wall Street practitioners. Students can evaluate key assumptions to stress test the feasibility of their financial models for lending or investment purposes. Not only will students gain the useful skills of harnessing the power of Microsoft Excel for financial analysis and presentation purposes, they will also learn the fundamentals of valuation, what creates and destroys intrinsic value and understand how to apply this knowledge to pursue and advance their careers.

COURSE MATERIALS

No textbook is required, however, recommended books include:

1. Damodaran, Aswath, "The Little Book of Valuation: How to Value a Company, Pick a Stock and Profit", 1 edition, Wiley, 2011
2. Graham, Benjamin; Dodd, David, " Security Analysis: Sixth Edition, Foreword by Warren Buffett", 6th edition, McGraw-Hill Education, 2008
3. Graham, Benjamin; Zweig, Jason, " The Intelligent Investor: The Definitive Book on Value Investing", Rev Sub edition, Harper Business, 2006

4. Greenwald, Bruce C.N.; Kahn, Judd; Sonkin, Paul D.; van Biema, Michael, "Value Investing: From Graham to Buffett and Beyond", 1 edition, Wiley, 2004

Articles will be suggested throughout the course as appropriate.

Textbook:

No formal textbook. Any reading materials will be e-mailed or provided

Canvas:

Canvas will be the primary source of information for this course. I will post all classwork that we do (mainly excel documents) onto canvas so that you can check back at the work. Check Canvas (canvas.rutgers.edu) regularly

E-Mail:

I will be sending emails out regarding each week's learning objective. You are responsible to make sure that you receive these emails as they will include the classwork that we will do each week. If you do not receive these emails, then please speak to me ASAP. Check your official Rutgers email account regularly

Use of various specific websites will be suggested strongly and include:

- finance.yahoo.com (financial news, information and data)
- <http://finviz.com/> (financial news, information and data)
- <http://investor.wd40company.com/overview/default.aspx>
(investor relations site of WD-40 (ticker: WDFC), company we analyze in class)
- www.morningstar.com (comprehensive source of investment information)
- <http://people.stern.nyu.edu/adamodar/> (website for NYU professor Aswath Damodaran. Provides data for calculating the Weighted Average Cost of Capital)
- <https://www.sec.gov/edgar/searchedgar/legacy/companysearch.html>
(SEC database for filings of public companies)
- www.seekingalpha.com (stock market news and financial analysis)
- www.wsj.com (daily financial and economic news)

LEARNING GOALS AND OBJECTIVES

Students completing this course should be able to:

- A. Understand how to properly lay out and format financial statements
- B. Analyze historical trends to determine drivers for projected financials
- C. Ensure that the Balance Sheet balances, the income statement matches what is filed with the SEC and incorporates any and all restatements of information
- D. Understand the Cash Flow Statement and be able to differentiate Operating, Investing and Financing Cash Flows
- E. Calculate Trading and Transaction comparables
- F. Determine whether a company generates a Revolving Credit Facility and Interest Expense or Excess Cash and Interest Income based on the Net Cash Flows projected
- G. Understand how to calculate Unlevered Free Cash Flow as well as Terminal Value
- H. Understand discount factors and how projected cash flows are discounted to determine a Current Intrinsic Value

- I. Understand Mid-Year convention for purposes of discounting cash flows
 - J. Understand the components of Total Enterprise value, how to calculate Fully Diluted Shares Outstanding, perform Last Twelve Months ("LTM") calculations and compute key ratios (DuPont formula, WACC, ROIC, ROE, etc.) to determine the quality of a company's operations
 - K. Determine whether the Intrinsic Value of a Company makes it a Buy, Sell or Hold when compared to the current share price
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PREREQUISITES

To best take advantage of this class students should have a good understanding of basic Financial Accounting and Corporate Finance.

ACADEMIC INTEGRITY

I do NOT tolerate cheating. Students are responsible for understanding the RU Academic Integrity Policy (<http://academicintegrity.rutgers.edu/>)

I will strongly enforce this Policy and pursue *all* violations. On all examinations and assignments, students must sign the RU Honor Pledge, which states, "On my honor, I have neither received nor given any unauthorized assistance on this examination or assignment." I will screen all written assignments through *SafeAssign* or *Turnitin*, plagiarism detection services that compare the work against a large database of past work. Don't let cheating destroy your hard-earned opportunity to learn. See business.rutgers.edu/ai for more details.

ATTENDANCE AND PREPARATION POLICY

-Expect me to attend all class sessions. I expect the same of you. If I am to be absent, my department chair or I will send you notice via email and Canvas as far in advance as possible. If you are to be absent, report your absence in advance at <https://sims.rutgers.edu/ssra/>. If your absence is due to religious observance, a Rutgers-approved activity, illness, or family emergency/death and you seek makeup work, also send me an email with full details and supporting documentation [within three days of your first absence].

-For weather emergencies, consult the campus home page. If the campus is open, class will be held, unless there is an emergency on my end, in which case I will notify everyone by email at least three hours prior to the start of class.

-Expect me to arrive on time for each class session. I expect the same of you. If you are going to be tardy, then quietly enter the room and make your way to the back of the classroom so as not to disturb the other students.

- Expect me to remain for the entirety of each class session. I expect the same of you. If you are going to leave early, then please let me know at the beginning of class, so that I can seat you near an exit and minimize any class disruptions.
 - Expect me to prepare properly for each class session. I expect the same of you. Complete all background reading and assignments. You cannot learn if you are not prepared. The minimum expectation is that for each 3 hour class session, you have prepared by studying for at least twice as many hours.
 - Expect me to participate fully in each class session. I expect the same of you. Stay focused and involved. You cannot learn if you are not paying attention. Laptops / Computers in the classroom are for notetaking, not surfing the web.
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CLASSROOM CONDUCT

I expect students to conduct themselves professionally at all times in my class. Students must be respectful of others and of sometimes extremely differing points of view, that may sometimes even seem offensive. That doesn't mean that students have to agree with each other, but they do have to give each other the opportunity to present their views in a safe, professional, and unthreatening venue. Disrespectful students will be asked to leave my classroom.

I don't mind if there is food or drink in the classroom, provided that the rules at RBS allow such things, and that the food isn't so aromatic or noisome as to be distracting to your classmates. A simple gauge is that if your neighbor can smell it, then it doesn't belong in my classroom. All this notwithstanding, I strongly suggest that you eat either before or after class.

Texting and incessantly checking your cell phone will **NOT** be tolerated. I will have my cell phone face down and I expect the same of you. We will have a break in the middle of class and at that time, you will be free to text, respond to e-mails and check your phone. Please show me the same courtesy that I show you.

COURSE CONTENT

- A. Course Foundation
 - 1) How to properly format financial statements
 - 2) How to present the historical income statement & balance sheet
- B. Analysis of Financial Statements
 - 1) Identifying trends from historical financials
 - 2) Choosing drivers to project financials and providing a rationale for selections

- C. How to project the future income statement and balance sheet
- D. BASE Calculations (Beginning + Additions - Subtractions = ENDING Balance)
 - 1) Property, Plant & Equipment
 - 2) Retained Earnings
 - 3) Intangible Assets
- E. Projecting the income statement, balance sheet & Calculations
- F. Calculating Operating Working Capital
- G. How to Build the Cash Flow Statement and understanding the 3 components:
 - 1) Operating
 - 2) Investing
 - 3) Financing
- H. Differentiating which cash flow line items go where and why
- I. Projecting the Cash Flow Statement and avoiding Circularity
- J. Understanding the concepts of Excess Cash / Revolver
- K. Building the Debt Schedule (Interest Income vs. Interest Expense)
- L. Calculating Weighted Average Cost of Capital (WACC)
- M. How to Calculate Trading & Transaction Comparables
 - 1) Understanding how the results help us to determine a company's intrinsic value
- N. How to build the Discounted Cash Flow (DCF) model from the Cash Flow Statement
 - 1) Unlevered Free Cash Flows
 - 2) Terminal Value
 - 3) Mid-Year Convention
- O. Determine whether a Company is trading above or below its intrinsic value P. Analysis at Various Prices (AVP)
- Q. Summary Tab:
 - 1) Size (Sales, Gross Profit, EBITDA, EBIT, OCF, Capex, Net Income, Debt/Equity)
 - 2) Profitability (Margins, ROA, ROE, DuPont, ROIC, Payout ratio)
 - 3) Leverage & Coverage (Debt/Total Capital, Debt/EBITDA, FCF/Interest)
 - 4) Working Capital (Capex Intensity, Cash Conversion Cycle (DSO, DIO, DPO))
- R. Sensitivity & Scenario Analysis
- S. Project Analysis: NPV vs. IRR vs. Payback

GRADING POLICY

Your course grade is comprised of three (3) elements, each of which is described in greater detail below:

1. Attendance: 15%
2. Homework: 60%
3. Final Project: 25%

Grading Scale

- A 90.00 - 100
- A- 88.00 - 89.00

B+	85.00 - 87.00
B	80.00 - 84.00
B-	78.00 - 79.00
C+	75.00 - 77.00
C	65.00 - 74.00
C-	60.00 - 64.00
D	50.00 - 59.00
F	Below 50

While it would be nice for everyone to get an A, your course grade will reflect the amount of work and effort that you put into your project and homework assignments. Your final grade is not subject to negotiation. If you feel I have made an error or you would like me to look over a grade I gave you, submit your written argument to me within one week of receiving a grade. Clarify the precise error I made and provide all due supporting documents. If in the end I made an error, I will gladly correct it. I will however not change grades for reasons such as a lost scholarship, lowering your GPA, or lost internship opportunity.

ATTENDANCE (15%)

Attendance in class is mandatory and is factored into your overall grade. You will receive one (1) point for each class you attend, and an additional 1 bonus point if you receive a perfect attendance grade. If you are going to miss a class/classes, please speak to me beforehand so that we can discuss a solution.

HOMEWORK (60%)

1. There are 12 assignments, and each will be worth 5% of the final grade
2. After each class an assignment will be given based upon what we did in class
3. Assignments will be e-mailed upon completion
4. Assignments will be due by () before the next class 5. Grading for each assignment will be determined as follows:

i)	Was the assignment submitted?	20%
ii)	Was it submitted on time?	20%
iii)	Was it completed?	20%
iv)	Did it employ logic and thought?	20%
v)	Was the answer correct?	20%
6. If you do not reply to my e-mail, it is 10 points (10%) off your grade

FINAL PROJECT (25%)

1. The project will be given 2 weeks before the final class and it will involve building a financial model from scratch as we did together throughout the semester
2. A grading rubric will be provided that explains the point scale for each part of the project
3. There will be a Q&A discussion a week before the project is due so all questions may be answered in an open forum
4. The project is due by midnight prior to the Final Class

COURSE SCHEDULE (subject to change)

Listed below is a general view of the weekly class schedule. This schedule may be subject to change in the event of a cancelled class or for any other reason.

Class #	Content
Class 1	Overview of the Course & introduction to Excel
Class 2	Laying out and Formatting the Income Statement & Balance Sheet
Class 3	Review of 10 years of Historical Financials; Crafting Assumptions
Class 4	Calculating Historical Income Statement Metrics to create Projections
Class 5	Calculating Historical Balance Sheet Metrics to create Projections; BASE Calculations for Retained Earnings and PP&E
Class 6	Projecting the Income Statement and Balance Sheet
Class 7	Laying out the Debt Schedule and Building the Cash Flow Statement
Class 8	Building a DCF Model off of the Cash Flow Statement
Class 9	WACC; Trading & Transaction Comparables
Class 10	How to Present Financial Data: AVP and Summary Tab
Class 11	NPV vs. IRR vs. Payback. FINAL PROJECT ASSIGNED
Class 12	Q&A Class on FINAL PROJECT
Class 13	Final Project due

SUPPORT SERVICES

If you need accommodation for a *disability*, obtain a Letter of Accommodation from the Office of Disability Services. The Office of Disability Services at Rutgers, The State University of New Jersey, provides student-centered and student-inclusive programming in compliance with the Americans with

Disabilities Act of 1990, the Americans with Disabilities Act Amendments of 2008, Section 504 of the Rehabilitation Act of 1973, Section 508 of the Rehabilitation Act of 1998, and the New Jersey Law Against Discrimination. More information can be found at ods.rutgers.edu.

[Rutgers University-New Brunswick ODS phone (848)445-6800 or email dsoffice@echo.rutgers.edu]

[Rutgers University-Newark ODS phone (973)353-5375 or email ods@newark.rutgers.edu]

If you are *pregnant*, the Office of Title IX and ADA Compliance is available to assist with any concerns or potential accommodations related to pregnancy.

[Rutgers University-New Brunswick Title IX Coordinator phone (848)932-8200 or email jackie.moran@rutgers.edu]

[Rutgers University-Newark Office of Title IX and ADA Compliance phone (973)353-1906 or email TitleIX@newark.rutgers.edu]

If you seek *religious accommodations*, the Office of the Dean of Students is available to verify absences for religious observance, as needed.

[Rutgers University-New Brunswick Dean of Students phone (848)932-2300 or email deanofstudents@echo.rutgers.edu]

[Rutgers University-Newark Dean of Students phone (973)353-5063 or email DeanofStudents@newark.rutgers.edu]

If you have experienced any form of *gender or sex-based discrimination or harassment*, including sexual assault, sexual harassment, relationship violence, or stalking, the Office for Violence Prevention and Victim Assistance provides help and support. More information can be found at <http://vpva.rutgers.edu/>.

[Rutgers University-New Brunswick incident report link: <http://studentconduct.rutgers.edu/concern/>. You may contact the Office for Violence Prevention and Victim Assistance at (848)932-1181]

[Rutgers University-Newark incident report link: https://cm.maxient.com/reportingform.php?RutgersUniv&layout_id=7 . You may also contact the Office of Title IX and ADA Compliance at (973)353-1906 or email at TitleIX@newark.rutgers.edu. If you wish to speak with a staff member who is confidential and does **not** have a reporting responsibility, you may contact the Office for Violence Prevention and Victim Assistance at (973)353-1918 or email run.vpva@rutgers.edu]

If students who have experienced a temporary condition or injury that is adversely affecting their ability to fully participate, you should submit a request via <https://temporaryconditions.rutgers.edu> .

If you are a military **veteran** or are on active military duty, you can obtain support through the Office of Veteran and Military Programs and Services. <http://veterans.rutgers.edu/>

If you are in need of **mental health** services, please use our readily available services.

[Rutgers University-Newark Counseling Center: <http://counseling.newark.rutgers.edu/>]

[Rutgers Counseling and Psychological Services–New Brunswick: <http://rhscaps.rutgers.edu/>]

If you are in need of **physical health** services, please use our readily available services.

[Rutgers Health Services – Newark: <http://health.newark.rutgers.edu/>]

[Rutgers Health Services – New Brunswick: <http://health.rutgers.edu/>]

If you are in need of **legal** services, please use our readily available services: <http://rusls.rutgers.edu/>

Students experiencing difficulty in courses due to **English as a second language (ESL)** should contact the Program in American Language Studies for supports.

[Rutgers–Newark: PALS@newark.rutgers.edu]

[Rutgers–New Brunswick: eslpals@english.rutgers.edu]

If you are in need of additional **academic assistance**, please use our readily available services.

[Rutgers University-Newark Learning Center: <http://www.ncas.rutgers.edu/rlc>

[Rutgers University-Newark Writing Center: <http://www.ncas.rutgers.edu/writingcenter>]

[Rutgers University-New Brunswick Learning Center: <https://rlc.rutgers.edu/>]

[Optional items that many faculty include:

- Students must sign, date, and return a statement declaring that they understand the RU Academic Integrity Policy.

- Students must sign, date, and return a statement declaring that they understand this syllabus.]