Columbia Business School
AT THE VERY CENTER OF BUSINESS™

10/22/2022

SYLLABUS (preliminary)
CORPORATE TRANSACTIONS AND FINANCIAL MODELLING (3 credits)
SPRING 2023

B 8019-001 – T 8:30am-11:45am (Building ###)
B 8019-002 – W 8:30am-11:45am (Building ###)
B 8019-003 – R 8:30am-11:45am (Building ###)

No auditors

No temporary/permanent switching between sections
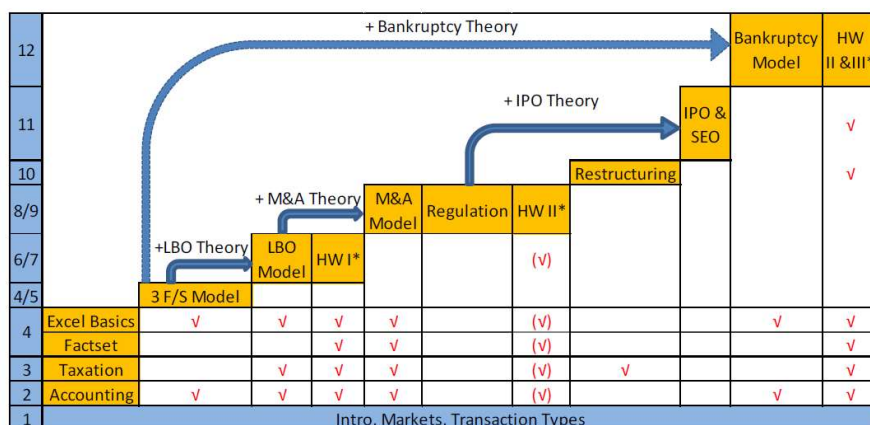
I. CONTACT DETAILS

Prof. Anne Heinrichs, CFA
ah3245@columbia.edu
312-613-1530 (cell)
Office hours/reviews: Fridays (time to be announced)

II. B 8019 ROADMAP

III. COURSE OVERVIEW

The main objective of "Corporate Transactions and Financial Modelling" is for you to acquire a lasting ability to successfully understand, analyze, model, value and creatively think about e.g. LBO, M&A, IPO/SEO and restructuring activities. Towards this end, we will (1) explore accounting, regulatory, taxation, structural, institutional and process-related aspects of different transaction types, (2) develop advanced valuation and financial statements analysis skills, and (3) discuss (step-by-step) how to prepare full-blown operating and financial models in Excel. We use these models to investigate the impact of different deal structures, accounting choices, operating assumptions and financing decisions, e.g. on firm value, liquidity, profitability, returns, and other financial statement ratios. The course draws on basic valuation concepts and financial statement analysis skills taught in your core classes. We advance them in various ways. First, we integrate institutional and process-related details into our study of corporate transactions. Second, we extend accounting, taxation and regulatory knowledge to equip you for deal-specific analysis. Third, in Excel, we work through and understand full-blown M&A, LBO and -time permitting- bankruptcy models (with integrated B/S, I/S and CFS) to study the feasibility of deals. Throughout the course, we use databases that are commonly used by practitioners and place special emphasis on real-world applications. For example, you receive your own FactSet Desktop license including Excel add-in and we

incorporate FactSet applications into the course. The course's overarching goal is for you to obtain an advanced toolbox that helps to succeed in a role in IB, PE, consulting, investment management, corporate management or entrepreneurship with required transaction skills and knowledge.

IV. COURSE PREREQUISITES

Academic prerequisites are strong fundamental backgrounds in financial accounting (e.g. B5001 or B6001) and corporate finance (e.g. B5300 or B6300) and at least one elective course in financial accounting or corporate finance taken over the past 5 years. Your grades in these three courses should average H- or better, and you need to have a good intuitive understanding of the material in the courses.

Technical prerequisites are basic Windows Excel skills and the availability of a windows-based laptop. Add-ins that we use in this course do not work properly on a Mac (*even if bootable into Windows*). If you do not have a windows-based laptop, do not bid for this course. Any model-specific Excel content will be covered in class expecting that you are familiar with basic Excel functions listed in the 'Excel pre-assessment' form at the end of this syllabus. If you like to refresh your Excel skills before our first class, please take Wall Street Prep's Excel Crash Course.

V. COURSE MATERIAL

No textbook or physical course package is required for this course. Required readings are available on CANVAS. CANVAS also provides classroom slides, journal and newspaper articles, documents from corporate transactions, excel files and any additional resources. Additional resources elaborate upon course topics and provide deeper insights into classroom discussions (but will not be directly tested in graded work in this course).

VI. GRADING

Your performance is evaluated based on five types of deliverables:

Deliverables			
3 Homework Assignments		3 x 12% =	36%
1 Take-home Final			34%
5 Online Mini-Quizzes		5 x 4% =	20%
Class Participation			10%
TOTAL			**100%**

Your final class grade is determined relative to the performance of other students in the course. I will use the below distribution to assign letter grades but reserve the right to make slight adjustments.

Letter Grade	GPA	% of students (target)
H+	11	2%
H, H-	10, 9	48%
HP+, HP, HP-	8, 7, 6	45%
P1+ or below	5 or below	5%

Any regrading requests have to be submitted in writing within 5 days after points for your graded work were posted on CANVAS. Your request needs to explain why you think you deserve more points. I then regrade your full submission and your points can go up or down.

VII.   GRADED WORK

3 Homework Assignments (designation type A: **<u>group/group</u>**)
Three equally-weighted homework assignments account for 3x12%=36% of your course grade and should take you circa 3x4hours=12 hours to complete. They build upon material that we covered in the prior class(es) and might introduce new content that we will discuss in the next class. Homework assignments can comprise of short answer questions, modelling tasks, brief case scenarios and database research exercises. **You are required to discuss and prepare homework in a group of 3-5 people**. Each person in a group needs to be actively enrolled in B8019 in Spring 2023 and must actively contribute to the discussion and preparation of homework solutions. **Discussion groups need to be formed by Feb 4th, 5pm and each group needs to nominate one group member to upload the group's answer files for all 3 homework assignments on Canvas.** On Jan 14th I will share access to a google spreadsheet where the names of group member can be entered. **Per homework, there will only be one submission per group (no individual submissions) and all students in the group will get the same grade based on the uploaded group submission.** Assignments are available on CANVAS and submissions are electronically due on CANVAS on the following days:

	Available:	Due:
• Homework 1:	Feb 9 (9pm)	Feb 21 p.1 (6am)/Mar 28 p.2 (6am)
• Homework 2:	Mar 23 (9pm)	Apr 25 (6am)
• Homework 3:	Mar 23 (9pm)	Apr 25 (6am)

Note: If you like HW2 to be graded early, you need to submit answers by Apr 4 6am

Take-home final (designation type C: **individual/individual**)
The take-home final accounts for 34% of your course grade, needs to be individually prepared and completed and I expect you to spend circa 8 hours on it. Similar to the homework assignments, the final exam can be a mix of short answer questions, modelling tasks, brief case scenarios and database research exercises. You can choose a 48-hour period between Apr 22 (5pm) – May 3 (10am) to work on the final. All classes, except class 12 are exam relevant. The exam is fully administered through Canvas. On your chosen start day, you go to 'assignments' > 'final exam' and start the exam by clicking on 'take the quiz'. After that, you have 48 hours to complete and submit your answers (latest submission possible is May 3 at 10am). The exam is designated type C (individual/individual) and you cannot talk with anyone (except myself) about the exam, before and after your submission.

5 Mini Quizzes (each 35 minutes) (designation type C: **individual/individual**)
Five mini online quizzes account for 20% of your course grade. Each mini quiz carries the same weight towards your final grade (4%) and can consist of true/false and multiple-choice questions (MCQs). Quizzes can be started on CANVAS within the below mentioned periods and have a time limit of 35 minutes during which you need to select your answers.

- Quiz 1: Feb 2 (9pm) – Feb 7 (6am)
- Quiz 2: Feb 9 (9pm) – Feb 14 (6am)
- Quiz 3: Feb 23 (9pm) – Feb 28 (6am)
- Quiz 4: Mar 16 (9pm) – Mar 21 (6am)
- Quiz 5: Apr 6 (9pm) – Apr 11 (6am)

Per mini quiz, at least two thirds of the questions build upon material covered in prior class(es). Any remaining questions are based on required pre-readings for the next class, if any. The weekly pre-readings, if any, take circa 1 hour to complete.

Class Participation

Participation accounts for 10% of your course grade. *You start the course with a full participation credit of 10%.* I only reduce this credit if you are inattentive or unprepared in class, repetitively miss class or disrupt class. *Without* grading the quality or quantity of contributions, I seek and encourage active classroom debate and rely on your participation. Occasionally, I may cold call.

Students who miss more than 33% of classes due to unexcused absences will receive a maximum grade of P. Students who miss more than 50% due to unexcused absences will receive an F in the course. With one exception I excuse absences following the school's attendance requirements for the Core. The exception is that I do not excuse absences for religious observances without documentation.

VIII. <u>WAITLISTED STUDENTS (ONLY)</u> - <u>MUST READ</u>

CANVAS material is exclusively for enrolled students, no exceptions. If you are currently waitlisted for this course, you cannot get access to CANVAS until you are officially enrolled in the course.

Except for class 1, classes are only for enrolled students. Class 1 should also be attended by the top 3 waitlisted students (=> OSA maintains this list – please check your status with them, I don't have access to the list). If you are on waitlist position 4 or lower, please do NOT come to class 1 as you will not be able to attend.

<u>If you are among the top 3 waitlisted students for a given section as of 1/14/2023 at 9am</u>, I will automatically arrange the FactSet desktop license with Excel-plug in for you and you are expected to attend the first class.

- o <u>If you become officially enrolled before the beginning of class 1</u> (at which point you will automatically have access to our CANVAS site), you are responsible for all deliverables (on the regular due dates)
- o <u>If you do NOT become officially enrolled before the beginning of class 2</u>, you will not be able to attend classes on and after Jan 31. No exceptions (no auditing).

<u>If you are NOT among the top 3 waitlisted students for a given section as of 1/14/2023 at 9am, please do not contact me about the course unless you are offered a seat in the course before class 2.</u> If you get enrolled from the waitlist, you need to briefly email me with the subject line: "NEED LICENSE". I will then immediately arrange your FactSet license and you will have prompt access to all course material on CANVAS. You will be responsible for all deliverables (on the regular due dates) except attending the first class.

I cannot provide exceptions to the above.

IX. SOFTWARE INSTALLATION

Before the start of the **<u>third</u>** class, please:

(1) Install Factset's desktop version including Excel add-in on your laptop
(2) Optional: Install and activate the TTS Macro on your laptop

I will send out a welcome email with more instructions on Jan 14th.

X. HONOR CODE

All students are expected to abide to Columbia's Honor Code stating: "As a lifelong member of the Columbia Business School community, I adhere to the principles of truth, integrity and respect. I will not lie, cheat, steal or tolerate those who do". Violations of the Honor Code cannot be tolerated and will lead to a failing grade. To support compliance with the Honor Code, I ask that the following pledge is electronically signed when you submit your final take home exam. "I pledge my honor that I have not violated the Honor Code during the pre-assignment, homework assignment, quizzes and the final exam submitted for this course." Without my prior written approval, any course-related material may not be shared with anyone. Anyone includes other students even if they are taking a different section of the same course. Violations will be treated as a violation of the Honor Code.

XI. LAPTOPS, PHONES, PDAs, TABLETS

Laptops: Classes 3-11 include financial modelling content or database research. You might find it helpful to follow Excel and database demonstrations on your laptop. Please bring your laptop to these classes.

Cellphone use is not permitted during class. Phones & other devices with mobile phone functionality should be powered off (or at a minimum muted) before we start class. If you need to be reachable immediately during class (e.g. your wife is going into labor any minute), please let me know before class and you can keep phone & volume turned on, of course.

XII. CORE OVERLAP

Core Class	Content Link	
	Core	Elective: B 8018
Corporate Finance (B5300 or B6300)	valuation of firms/stocks/bonds, risk-return concepts, capital raising, DCF	full-blown operating and financing models for valuation and anaysis of LBO, M&A, IPO and restructuring activities.
Financial Accounting (B5001 or B6001)	financial statement analysis, ratio analysis, inter-company investments	purchase/equity method of accounting, consolidation, recap accounting, deal taxation, push-down accounting, pensions, ESOPs
Managerial Economics (B5200 or B6200)	supply-demand theory, market settings: monopoly vs. competitive models	antitrust for LBOs and M&As, revenue forecasting
Managerial Statistics (B5100 or B6100)	regression analysis and descriptive statistics	forecasting techniques, valuation concepts, economic overview of transactions
Strategy Formulation (B5502 or B6502)	cost leadership, differentiation, diversification, competitive advantage	rationale for corporate transactions, IPO equity story, M&A synergies, LBO bidding process

XIII. CORE CULTURE

The below principles apply to our course.

Present: Be on time and present in class.

Prepared: Complete required pre-work and bring nameplates. Occasionally, I will cold call.

Participating: Participate constructively and only use electronic devices as specified in section XI. of the syllabus.

XIV.   COURSE SYNOPSIS

"Corporate Transactions and Financial Modelling" begins with a market overview and we develop fundamental skills to analyze and structure transactions. We then cover the basics of financial modeling and prepare a non-transactional three financial statement model. During the subsequent classes, we focus on the analysis and modelling aspects of specific transaction types (see course outline). Where applicable, we discuss findings of transactions-related research studies and we may welcome one or two guest speakers to share with us their practical insights.

XV.   COURSE OUTLINE (yellow (grey) = main (minor) topic in that particular class)

24-Jan **25-Jan** **26-Jan**	**CLASS 1** ▪ <mark>Introduction & clarifying course expectations</mark> ▪ <mark>Transaction Types</mark> Discuss current market conditions, investigate economic trends and relevant conditions for transactions, explore rationales for transaction types, study deal characteristics ▪ Accounting Accounting (for transactions) – how does it matter for a deal? Intercompany investments
31-Jan **1-Feb** **2-Feb**	**CLASS 2** ▪ <mark>Accounting (continued from class 1)</mark> Discuss intercompany-investments, acquisition method, asset step-ups, goodwill, non-controlling interests, push-down accounting, accounting for deal costs, employee stock options, stockholder's equity account
7-Feb **8-Feb** **9-Feb**	**CLASS 3 (mini quiz 1 due on CANVAS by 6am)** ▪ Accounting (continued from class 2) - (diluted) EPS, EPS rule of thumb ▪ <mark>Taxation</mark> Introduce the basics of corporate taxation and analyze how deal structure impacts (federal) taxation and consequently the feasibility of deals; discuss e.g. C vs. S corporations, asset vs. stock deals, Sec. 338 for C corps, asset step-ups
14-Feb **15-Feb** **16-Feb**	**CLASS 4 (mini quiz 2 due on CANVAS by 6am)** ▪ <mark>Taxation (continued from class 3)</mark> Discuss e.g. Sec 338 with NOLs, Sec 338 for S corps, TRAs, Sec. 382, Sec. 368, tax-free exits, type "A"-"D" reorganization
21-Feb **22-Feb** **23-Feb**	**CLASS 5 (HW1 part 1 due on CANVAS by 6am)** ▪ <mark>Modelling Essentials</mark> Introduce FactSet's Excel add-in, TTS Macros and adjust excel settings, study layouts of financial/operating models and discuss their purpose/limitations ▪ Basic 3 Financial Statement Model Introduction to build a mini valuation model with integrated B/S, I/S and CFS

28-Feb **1-Mar** **2-Mar**	**CLASS 6 (mini quiz 3 due on CANVAS by 6am)** ▪ <mark>Basic 3 Financial Statement Model (continued from class 5)</mark> Understand how to build a mini valuation model with integrated B/S, I/S, CFS sensitivity analysis; data tables
21-Mar **22-Mar** **23-Mar**	**CLASS 7 (mini quiz 4 due on CANVAS by 6am)** ▪ <mark>LBO Intro & Model</mark> ➢ Discuss LBO characteristics, understand and analyze full-blown LBO model in Excel with integrated B/S, I/S and CFS; input and output sheets; working schedules for debt/interest, equity, depreciation and working capital; cash sweep

28-Mar
29-Mar
30-Mar
	CLASS 8 (HW1 part 2 due on Canvas by 6am)
	▪ <mark>LBO Model (continued from class 7)</mark>
	  ➢ Finish LBO topics from class 7, further explore scenarios toggle, error checking, auditing and troubleshooting techniques
	  ➢ Apply and extend accounting and taxation concepts
	  ➢ Compare different forecasting methods, discuss valuation under different deal structures

4-Apr **5-Apr** **6-Apr**	**CLASS 9 (HW2 can be submitted on CANVAS by 6am for early grading)** ▪ <mark>M&A Intro</mark> Learn how to mitigate information asymmetry and deal with conflicts of interest between signing/closing, discuss mechanisms such as working capital adjustments, collar arrangements, escrow accounts, earnout agreements, familiarize yourself with the M&A process/documents/consideration
11-Apr **12-Apr** **13-Apr**	**CLASS 10 (mini quiz 5 due on CANVAS by 10am)** ▪ <mark>M&A Model</mark> Build and analyze an M&A model in Excel to train the use of scenario toggles for different financing structures and operating conditions; FactSet's FDS codes; EPS accretion/dilution; working schedules and sensitivity analysis, error checking, auditing and troubleshooting techniques
18-Apr **19-Apr** **20-Apr**	**CLASS 11** ▪ <mark>Restructuring</mark> Discuss alternative exit and restructuring strategies such as divestiture, spin-off, equity carve-out, (cash rich) split off and tracking stock; study selected topics related to taxation and accounting of distressed firms (e.g. NOLs, COLs); learn how to monetize spin-off/split-offs

25-Apr
26-Apr
27-Apr
	CLASS 12 (HW 2 & 3 due on CANVAS by 6am)
	▪ <mark>Bankruptcy</mark>
	  Discuss bankruptcy process (chapter 11), debt restructuring, fresh-start accounting
	▪ Bankruptcy Model (time permitting)
	  Understand how to build and analyze a bankruptcy model

XVI. EXCEL PRE-ASSESSMENT

This course is taught using Windows Excel. All model-specific Excel content will be covered in class expecting that you are familiar with the basic Excel functions listed below:

- Change options and settings
- Enter formulas, text, and numbers
- Reference and anchor cells, rows, columns
- Paste special (e.g. formulas, formats, values)
- Insert, edit, copy, hide, (un)group, delete, move and name:
  worksheets, rows, columns
- Format cells (font, fills, borders, alignment) and use custom number formats
- Conditional formatting
- Header, footer, grid lines, freezing columns/rows
- Lookup functions, e.g. VLOOKUP and HLOOKUP
- Logical operators, e.g. IF, OR, AND, etc.
- Scenario functions e.g. INDEX, CHOOSE, OFFSET, and Excel's built-in scenario manager
- Error-checking formulas, e.g. IFERROR and ISERROR
- Goal seek
- Data tables
- Format graphs/charts (change colors, axes, data labels, tickers, chart titles, legends)
- Set print areas, view page breaks, show print previews