COLUMBIA UNIVERSITY
School of Professional Studies

Enterprise Risk Management Program

ERM CPS 5390: Credit Risk Management
Wednesdays, 8:10PM – 10:00PM
3 credits

Instructor:	Christakis (Chris) Droussiotis, c.droussiotis@columbia.edu, (908) 930-4725 (Voice /Text)
Instructor's Web:	**www.ProfessorDrou.com**
Office Hours:	In Person: 7:00pm-8:00pm (Tuesdays) Lewisohn Hall (2nd floor study room) Remote: https://calendly.com/professordrou/30min to book a 30-minute zoom call.
Response Policy:	I intend to log onto the course and check email daily. You should expect a response from me within 24 hours. If you have an urgent question or concern, please contact me via text message or telephone
Teaching Assistants:	TBA
Office Hours:	By Appointment

Course Overview

Credit Risk Management provides students with a comprehensive foundation in how financial institutions assess, price, and manage credit exposure across retail, corporate, and institutional markets. The course integrates core investment concepts, risk–return dynamics, time value of money, expected loss modeling, LGD, default rates, and portfolio theory tools such as CAPM and VaR. Students also gain a working understanding of the U.S. banking system, including investment and commercial banking functions, credit markets, macroeconomic forces, and the regulatory framework shaped by the Federal Reserve, the financial crisis, Dodd-Frank, and Basel guidelines.

Building on these fundamentals, students explore real-world credit portfolio management through topics such as CAMELS ratings, internal credit scoring, underwriting principles, syndication, loan trading, private credit, and structured products including CLOs and interest rate and credit default swaps. The course applies these techniques through case studies—such as JP Morgan, Silicon Valley Bank, Metanext CLO Fund, Home Suites, Celerity Technology, Spirit Airlines, and Hyatt Hotels—developing students' ability to evaluate borrowers, analyze financial statements, estimate debt capacity, and understand risk, recovery, and valuation across multiple lending contexts.

Learning Objectives (LO)

Upon successful completion of this course, you will be able to:

1. Explain the fundamental principles of credit risk, including risk–return dynamics, expected loss modeling, LGD, and default probability.
2. Interpret how the U.S. banking system, credit markets, macroeconomic conditions, and regulatory frameworks (Dodd-Frank, Basel guidelines) influence credit decision-making.
3. Analyze the creditworthiness of consumers and corporations using financial statements, ratio analysis, solvency and liquidity metrics, and industry risk assessments.
4. Evaluate retail credit tools such as FICO scores, mortgage mathematics, consumer credit protections, and real estate lending practices.
5. Assess corporate loan structures, credit facilities, covenants, collateral, and debt capacity across various industries and borrower types.
6. Apply portfolio management concepts—such as CAMELS ratings, exposure measurement, syndications, and reserves/ACL—to manage credit risk at the portfolio level.
7. Model structured finance products including CLOs and multi-tranche credit structures, performing LGD, default, and return analysis.
8. Examine the role of credit derivatives (e.g., CDS, TRS) in hedging and transferring credit and market risk.
9. Critically evaluate real-world credit failures and case studies (e.g., SVB, Archegos, structured credit breakdowns) to identify root causes and risk management lessons.

10. Apply industry-standard credit underwriting, monitoring, and reporting practices relevant to roles in banking, private credit, and enterprise risk management.

Readings

Required Textbook (CD)

The following text is based on the professor's lecture notes– with the textbook you can access Active Learning homework/project and exam platform.

Droussiotis, C. & Shelly S. (2023), ***Credit Risk Management and Analysis***, First Edition. Cognella Publishing. ISBN-13: 978-1793541000 - Link to purchase including Active Learning: **: https://store.cognella.com/92009**

Supplemental Readings

I will post supplementary articles, business cases, and Power Point Lecture Notes on Canvas and on my website www.ProfessorDrou.com on a regular basis.

Excel

In addition, students are encouraged to use Excel to perform the analytical calculations discussed in the course. Most of the lectures will include spreadsheet analysis.

Resources

Columbia University Library

Columbia's extensive library system ranks in the top five academic libraries in the nation, with many of its services and resources available online: http://library.columbia.edu/.

SPS Academic Resources

The Office of Student Affairs provides students with academic counseling and support services such as online tutoring and career coaching: http://sps.columbia.edu/student-life-and-alumni-relations/academic-resources

Columbia University Information Technology

Columbia University Information Technology (CUIT) provides Columbia University students, faculty, and staff with central computing and communications services. Students, faculty, and staff may access University-provided discounted software downloads (https://columbiait.onthehub.com/).

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Course Requirements (Assignments)

Graded Homework Problems (20%):

Graded Homework Problems give you an opportunity to demonstrate your mastery of the topics covered in the course and solidify your knowledge of finance theory through the practical application of the concepts, models, and theories, discussed in class. Students are required to submit a set of Graded Homework Problems. Homework and due dates will be posted on Canvas. The student could wish to submit their homework via Cognella's ACTIVE LEARNING platform.

Individual Project (15%):
Each student will be assigned a publicly traded company. See Exhibit A for Project's description.

Attendance (5%):
Attendance (both in class and on-line) will be recorded.

Midterm Exam (30%):
There will be a Midterm Exam that will be based on the textbook (chapters 1-4 and 10-11 and the spreadsheets taught in class.

Final Exam (30%):
The Final Exam will include some of the concepts from the midterm including equity valuation, Return and TVM. Most of the exam though will focus on textbook chapters 15-17 and partial chapter 9. The students need to study spreadsheets analysis covered in class including the Alexandria Hotel projections and DCF analysis, Hyatt stock valuation, LBO and Capital Markets financial model, and return and bond analytics spreadsheet. The exam will be taken during the Exam Period. It will be opened books taken on-line.

The students need to study the various spreadsheet analysis covered in class including the Celerity Technology Company case study; the Alexandria Hotel WACC analysis and Hyatt Corporation enterprise valuation methods.

Evaluation/Grading

The final grade will be calculated as described below:

FINAL GRADING SCALE

Grade	Percentage
A+	98–100 %
A	93–97.9 %
A-	90–92.9 %
B+	87–89.9 %
B	83–86.9 %
B-	80–82.9 %
C+	77–79.9 %
C	73–76.9 %
C-	70–72.9 %
D	60–69.9 %
F	59.9% and below

ASSIGNMENT	% Weight
Mid-term Exam	30%
Final Exam	30%
Attendance and Participation	5%
Graded Homework	20%
Individual Project	15%

Course Policies

I expect you to come to class on time and thoroughly prepared. I look forward to an interesting, lively and confidential discussion. If you miss an experience in class, you miss an important learning moment, and the class misses your contribution.

Late work
There will be no credit granted to any written assignment that is not submitted on the due date noted in the course syllabus without advance notice and permission from the instructor.

School and University Policies and Resources

Copyright Policy

Please note—Due to copyright restrictions, online access to this material is limited to instructors and students currently registered for this course. Please be advised that by clicking the link to the electronic materials in this course, you have read and accept the following:

> The copyright law of the United States (Title 17, United States Code) governs the making of photocopies or other reproductions of copyrighted materials. Under certain conditions specified in the law, libraries and archives are authorized to furnish a photocopy or other reproduction. One of these specified conditions is that the photocopy or reproduction is not to be "used for any purpose other than private study, scholarship, or research." If a user makes a request for, or later uses, a photocopy or reproduction for purposes in excess of "fair use," that user may be liable for copyright infringement.

Academic Integrity

Columbia University expects its students to act with honesty and propriety at all times and to respect the rights of others. It is fundamental University policy that academic dishonesty in any guise or personal conduct of any sort that disrupts the life of the University or denigrates or endangers members of the University community is unacceptable and will be dealt with severely. It is essential to the academic integrity and vitality of this community that individuals do their own work and properly acknowledge the circumstances, ideas, sources, and assistance upon which that work is based. Academic honesty in class assignments and exams is expected of all students at all times.

SPS holds each member of its community responsible for understanding and abiding by the SPS Academic Integrity and Community Standards posted at https://sps.columbia.edu/students/student-support/academic-integrity-community-standards. You are required to read these standards within the first few days of class. Ignorance of the School's policy concerning academic dishonesty shall not be a defense in any disciplinary proceedings.

Generative Artificial Intelligence (AI) Policy

Columbia's Generative AI Policy governs the use of generative AI tools in teaching, learning, and research, including specific guidance for students. Under this policy, each instructor determines the AI expectations for their own course, outlined in the Course Policies section of this syllabus. https://provost.columbia.edu/content/office-senior-vice-provost/ai-policy

Civility Statement

It is our intent that students from all backgrounds and perspectives be well-served by this course, that students' learning needs be addressed both in and out of class, and that the diverse perspectives that the students bring to this class be viewed as a resource, strength, and benefit. It is our intent to present materials and activities that are respectful of all participants.

Accessibility

Columbia is committed to providing equal access to qualified students with documented disabilities. A student's disability status and reasonable accommodations are individually determined based upon disability documentation and related information gathered through the intake process. For more information regarding this service, please visit the University's Health Services website: https://health.columbia.edu/content/disability-services.

Class Recordings

All or portions of the class may be recorded at the discretion of the Instructor to support your learning. At any point, the Instructor has the right to discontinue the recording if it is deemed to be obstructive to the learning process.

If the recording is posted, it is confidential and it is prohibited to share the recording outside of the class.

SPS Academic Resources

The Division of Student Affairs provides students with academic counseling and support services such as online tutoring and career coaching: https://sps.columbia.edu/students/student-support/student-support-resources.

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The Writing Center

The Writing Center provides writing support to undergraduate and graduate students through one-on-one consultations and workshops. They provide support at every stage of your writing, from brainstorming to final drafts. If you would like writing support, please visit the following site to learn about services offered and steps for scheduling an appointment. This resource is open to Columbia graduate students at no additional charge. Visit http://www.college.columbia.edu/core/uwp/writing-center.

Career Design Lab

The Career Design Lab supports current students and alumni with individualized career coaching including career assessment, resume & cover letter writing, agile internship job search strategy, personal branding, interview skills, career transitions, salary negotiations, and much more. Wherever you are in your career journey, the Career Design Lab team is here to support you. Link to https://careerdesignlab.sps.columbia.edu/

Course Schedule/Course Calendar

Please check Canvas and website www.ProfessorDrou.com for schedule changes and updates:

LECTURE OUTLINE

Week	S	LO	Textbook Chapters/ Notes	Lecture	Assignments /Homework
Sep 9	INVESTMENT ANALYSIS		Power Point Presentation	Introductions, Syllabus, Semester Outline Career in Credit Risk Management Investment Basics and Intro to Credit Risk Management: • Investment Vs Credit (Risk & Return Basics) • Time Value of Money, Mortgage Calc. Credit Basics (Expected Loss, LGD, DR) • Portfolio Theory basics (CAPM, VAR, Normal Distribution)	
Sep 16		L1	Ch. 1	The U.S. Banking System: • Investment Banking • Commercial Banking • Credit Markets & Macroeconomics • The Role of the Fed • Regulatory Framework (Financial Crisis, Bank, Dott Frank, BASL I, II, IIII, Guidelines)	
Sep 23		L2	Ch. 2&3	Credit Risk Portfolio Management 1 • Bank Units/ Products • CAMELS Bank Rating • Exposure & Rating • The "5C"of Credit Commercial • Reserves – Allowance for Credit Losses Case Studies: JP Morgan, Silicon Valey Bank	**Hwk#1 Due:** Ch 1a
Sep 30		L3	Ch. 3&4 (partial)	Credit Risk Portfolio Management 2 • Enterprise Risk Management • Portfolio Credit Risk Management (LGD, Probability of Default) • Private Credit (CLOs, BDCs) • CLO Portfolio Analysis (LGD, Default Risk Case Study – Metanext CLO Fund multi-tranche structure and analysis (LGD, DR, Equity Return and Break-Even Analysis)	**Hwk#2 Due:** Ch1b and Ch 2
Oct 7		L4	Ch. 10	Credit Risk Portfolio Management 3	**Hwk#3 Due:** Ch 3&4

Week	S	LO	Textbook Chapters/ Notes	Lecture	Assignments /Homework
				• Market Risk & Syndication and Exposure and the Loan Secondary Market (Loan yields Reduction (Credit Underwriting and Structuring Basics) • Portfolio Monitoring (Asset Management Monitoring & Reporting (AMMR) • Credit Derivatives including Swaps (Hedging Interest Rate Risk, Credit Default Swaps, Total Return Swaps (TRS) Watch a clip from the movie " The Big Short" Archegos Capital TRS Issue	
Oct 14		L4	Ch. 11	Midterm Overview (Exam on Credit Risk & Portfolio Management) Discussion on Individual Project	**Hwk#4 Due:** Ch 10
Oct 21		MIDTERM EXAM REVIEW			**Hwk#5 Due:** Ch 11
Oct 28		MIDTERM EXAM (Chapters 1-4, 10-11)			
Nov 4	CORPORATE FINANANCE	L5, 6	RWJ: Ch. 2 CD: Ch. 15	Credit Risk Analysis 1 (Retail Banking) • Consumer Credit • Consumer Credit Protection • Credit Performance (FICO) • Mortgage Math & Real Estate	
Nov 11		L7	RWJ: Ch. 3,4 CD: Ch. 15, 16	Credit Risk Analysis 2 (Corporate Banking) • Company Specific and Industry Risk (Corporate Loans) • Financial Credit & Structure of the Loan • Credit Facilities and Financial Instrument Case Study: Home Suites Inc.	
Nov 18		L8	CD: Ch 17	Credit Risk Analysis 3 (Company Specific) • Financial Statement and Ratio Analysis (Solvency Ratios, Liquidity Ratios, Altman's Z-Score) • Debt Capacity Analysis (Leverage Ratios, DCR, Collateral based advance rates) Case Study: Celerity Technology Inc.	

Week	S	LO	Textbook Chapters/ Notes	Lecture	Assignments /Homework
Nov 25		NO CLASS			
Dec 2		L8	CD: Ch 9	Credit Risk Analysis 4 (Company Specific) • Transaction Analysis, Return and Valuation (LBOs, Restructurings) • Risk, Recovery & Debt Capacity Case Studies: Alexandria Hotel, Spirit Air Bankruptcy, Hyatt Hotels	
Dec 9		L8		**Exam Review & Project Review**	
Dec 16		NO CLASS – READING DAY			
Dec 23		**FINAL EXAM**			

EXHIBIT A - FINAL PROJECT

INDIVIDUAL PROJECT DESCRIPTION

Each student will be assigned a publicly traded company. You need to do the following:

1. You need to spread at least **3-year historical financials** including the Balance Sheet, Income Statement and summary Cash Flow Statement that includes Working Capital, Capex and Depreciation expense. If the company's fiscal year end is not December 31, use Trailing Twelve Months (TTM) for Income and Cash Flow Statement and last reported quarter for the Balanced Sheet.

2. You need to build the **transaction sources and uses** and pro-forma balance sheet using the following assumptions:
    a. Purchase Stock Price: Any premium to the current price – (i.e., 20%)
    b. Refinance total debt (including short term and long term)
    c. Total Transaction fees and expenses of 3.0% of total (Purchase Price + Debt)
    d. New acquisition Debt should be structured as follows:
        i. The lowest amount of either:
            1. Senior Debt to total Acquisition Cost (Including transaction fees) of 50%; or
            2. Senior leverage of 4.0x (Senior Bank Debt 4.0x to the last reported EBITDA)
        ii. The lowest amount of either:
            1. Subordinated Bonds to total Acquisition Cost (including transaction cost) of 20%; or
            2. Subordinated Debt to last reported EBITDA of 2.0x
        iii. The Balance will be cash equity from the Private Equity Investor.

3. Your need to build **Projections** using reasonable assumptions (sales growth, margins, Capital Expenditures, Depreciation, Working Capital as % of Revenues, – based on historical experience – You may adjust them based on your independent work justifying the projected levels). Other assumptions will be as follows:
    a. Tax Rate: 22%
    b. Bank Loan Interest (Floating SOFR + 4.0% with Libor 50 bps escalation for the next 3 years) – use starting SOFR rate of 2.0%
    c. Bank Loan Schedule Amortization Yr 1-Yr 6: 1.0%, Yr 7: 94%
    d. Subordinated Debt Interest Rate – Fixed Rate 8.0%
    e. Subordinated Debt Scheduled Amortization Yr1-Yr7: 0%, Yr8: 100%
    f. No Dividends
    g. No Divestitures

4. Need to construct an **Equity Return and DCF Analysis** page.
    a. Calculate the Private Equity Investor's IRR based on the following assumptions:
        i. To Calculate the WACC use 20% Equity Return (Not CAPM)
        ii. Use the average of Terminal Value based on the following two methods:
            1. EBITDA Multiple method (use the same multiple you are purchasing the company.

2. TV based on perpetuity method (Use WACC and growth rates at 80% of WACC or lower) based next year's unlevered cash flow.

5. Run the Debt Capacity and Debt Ratios

6. Use Goal Seek to calculate the premium you need to pay for the company to meet 20% equity return.

Assigned Companies:

#	COMPANY	SYMBOL
1	Albany International	AIN
2	American Axle & Manufacturing	AXL
3	American Eagle	
4	Marcus Corporation	MCS
5	Boyd Gaming Corp.	BYD
6	Celenese Corporation	CE
7	Century Casino	CNTY
8	Choice Hotels Intern'l	CHH
9	Crimson Wine Group	CWGL
10	Fiverr International	FVRR
11	Flowserve Corporation	FLS
12	GoPro Inc.	GPRO
13	Hormal Foods Corporation	HRL
14	Jack in the Box Inc.	JACK

#	COMPANY	SYMBOL
15	Laureate Education	LAUR
16	Wynn Resorts	WYNN
17	Nabors Industries	NBR
18	Select Medical	SEM
19	Shake Shack	SHAK
20	Silgan Holdings	SLGN
21	Wyndham Hotels & Resorts	WH
22	Texas Roadhouse	TXRH
23	U.S. Foods	USFD
24	Wendy's Company	WEN
25	Wesco International	WCC
26	Wyndham Hotels & Resorts	WH
27	Wynn Resorts	WYNN