

FINA 7397 – Stock Analysis in Investment Banking

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COURSE OBJECTIVE

The Stock Analysis in Investment Banking course is designed to integrate fundamental finance and financial accounting theory learned. This course will focus on publicly traded companies. The purpose of this course is to teach students how apply the knowledge they have mastered and how working Wall Street and Buyside professionals analyze and value publicly traded companies. In addition, the fundamentals and practical aspects of this course can be applied to private companies, entrepreneurial start-up companies and even purchasing a house.

Learning is fun and creative, and this course is designed for students to have fun. Students will be taught to critically “think,” not just to “mimic.” Real publicly trading companies will be analyzed. Students will be taught how to analyze, synthesize, and articulate investment ideas through a well-constructed and comprehensive research reports. Research reports are an important core tool which through construction and cohesive thought, corporate finance and accounting principles are reinforced.

This Capstone Class “practically integrates” the important fundamental and theoretical knowledge that students have acquired in other core financial courses. Course work from financial accounting, finance, entrepreneurship and other fundamental business courses will be reviewed and practically applied.

At this juncture, students have already completed core business courses and have been taught a deep body of important theoretical business concepts.

The “Differentiating Factor” of this course is the “Real-World” approach to valuation taught by a “Wall Street Ranked” veteran research analyst, investment banker and entrepreneur. The course objective is to “Convey Knowledge” and establish practical “Core Financial Concepts.”

Students that complete this course will be prepared to interview and work for an investment bank, commercial bank, other financial institutions and in-house at a company. Additionally, students will be prepared to analyze personal stock investments or stock index fund investments and have a framework to build personal wealth through systematic investment.

COURSE CONCEPTS COVERED

- **Intellectual Acquisition**
 - Gain knowledge & understanding of Company valuation tools
 - Acquire the framework to analyze any public or private company in any industry
 - Understand how to use trading information to shape Company valuations
 - Apply basic finance & financial accounting principles

- **Quick Analysis of Publicly Traded Companies**
 - Each class quickly rip apart and analyze a public company
 - Determine if the company's "sell presentation" matches actual financial results
 - Quickly understand valuation drivers
 - Analyze the Company's stock trading chart

- **Prepare & Write Effective Research Reports for Publicly Traded Companies**
 - Structure of all essential components of an effective & comprehensive research report.
 - Why are research reports needed?
 - Who consumes the research product?
 - How does a research analyst interact with all interest parties?

- **Analyze Publicly Traded Companies.**
 - Basic fundamental analytical methodology
 - Effective historical analysis
 - Modelling & Projections - Effective spreadsheet modelling and monitoring process.
 - Company guidance to shape model & projections
 - Quarterly conference calls
 - Analyst day at company provides data
 - Industry and Sell Side meetings provides data
 - Travelling with Company provides data
 -

- **Capstone Course - Integrates Into Practical Use Existing & Fundamental MBA Course Studies**
 - *Financial Accounting*
 - How do the Balance Sheet, Income Statement & Changes in Cash Position speak with each other
 - Consumption of Assets through Depreciation, Depletion & Amortization (DD&A)
 - Net Earnings versus Cash Flow
 - *Corporate Finance*
 - Theory and practical use
 - What is an interest rate, interest rate components & how are they used in valuations?
 - How does all this apply to stock buy/accumulate/sell/hold recommendations?
 - **Investment Banking – How the Departments Works Together?**
 - Sales
 - Trading
 - Syndicate
 - Capital Markets

- **Introduction To Public Capital Markets ('PM') And PM Participants**

- Buyside Institutions
- Sell Side Institutions
- Industry Structure
- Role of Private Equity & Private Debt
- Role and interface with the issuing Company

- **Valuation of Public Companies**

- The Auction Process & Price Discovery
- Total Enterprise Value - TEV
- Liquidation Value
- Franchise Value or Ongoing Concern Value
- Comparable Company Analysis
- Net Asset Value
- Liquidity Analysis
- IPO, Secondaries or "Used Stock"

- **Developing Modelling Competency in Excel**

- **Corporate Modelling In Excel**

- History & Forecasting
- Sources & Uses of Cash Flow
- The Balance Sheet
- Sensitivity Analysis
- Principal Drivers & Stock Chart Analysis
- Margin Analysis - Common Size Statement
 - Common Statement Analysis - % of revenues
 - Unit Analysis - per unit boe analysis
- Company Guidance

- **Valuation Metrics - Derive & What Do They Mean?**

- Total Enterprise Value (TEV/EBITDA)
- Price/Cash Flow
- ROA, ROI & ROE
- IRR, PVI, Payout, Cash-On-Cash Analysis
- DCF Analysis
- Multiple Analysis and Peer Group Comparison
- Full Cycle ROI and Capital Efficiency Measures

- **Public Disclosure Source Documents**

- What is the role of the SEC?
- SEC Documents - 10K, 10Q, Proxy, 13-D
- Company Presentations
- Inside Information
- Analyst Certification
- Analyst Registration

- Investment Banking Disclosure
- Rating Systems
- **Ownership, Float and Trading Volume**
 - Shares Outstanding, Treasury Shares, Public Float
 - What does trading volume tell us?
- **Mastery of Presentations**
 - The best-looking report & presentation is important
 - Mastery of graphs, charts, pop outs etc.
 - With proper legends, labels etc.
 - The report should answer all the standard questions
- **Mastery of the Written Word**
 - All presentations and financial ideas are conveyed information by the written word
 - Reports and presentations must be concise, have impact and proper English
 - A very good proof-reader is required
 - No easy mistakes in text or tables allowed
- **Selling the Idea**
 - The 10,000 foot pitch
 - Value play, growth story, fallen angel play
 - Revaluation play, sector rotation play
 - Restructuring play
 - Overvalued play – short stock or avoid stock
 - Good company – overvalued – wait for better entry point
 - Buyout target
 - MBO or LBO
 - Competitor acquisition
- **Presentation Skills**
 - Present to class audience
 - Present to an active PM
 - Present to teacher
 - Present in a stock competition
- **Getting a Job – Research Report Analysis is Great Training**
 - Sell Side & Buyside Institutions
 - Private Equity Institutions
 - Debt Markets
 - Research job as effective training for investment banking, sales and syndicate
 - Research job as effective training for high yield & convertible securities.
 - Research job as effective training for equity funds including hedge funds
 - Research job as effective training for private equity funds and hedge funds
 - Research job as effective training for working in-house at a company
 - Making personal investments

CLASS ATTENDANCE PARTICIPATION

- Attendance in class is important & required – this is not an online course
- However, if I travel for work, a ZOOM class may be required
- Class participation & interaction with the teacher & other students is important
- We work in groups to solve all issues – valuation & presentation
- Read the research reports that I send you
- Study the company presentations
- Read the SEC documents

COURSE MATERIALS

FINA 7397 – STOCK ANALYSIS IN INVESTMENT BANKING

My PowerPoint Presentations are highly tailored for the current class lesson. I will send links to specified material and reference books that will be helpful.

Company Websites are available for all companies analyzed and have a plethora of information. If the class is small, I will utilize direct email. I will also utilize Blackboard if the class is large.

GRADING

Class Attendance and *Class Participation* are very important and are 40% of your grade.

Class Tests are important and are designed to determine that key concepts have been acquired & solidified.

The *Class Research Report & Individual/Group Research Reports* will be divided into sections with each student or student sub-group working on and mastering separate sections of the report. You can elect to work in a group or individually on your research report.

Students or student sub-groups will also complete their own research report. Students can leverage off of the expertise that other students have developed working on the class research report. Effectively working in groups is an important skill-set and essential to completing time-limited projects.

Research Presentation & Final are 20% of your grade. Once the Class Research Report and your individual or group Research Report is completed, we will discuss the report and you will be verbally quizzed on the separate sections of the report.

Category	Grade Weighting
Class Attendance	20%
Class Participation	20%
Class Test	20%
Class & Group Research Report	20%
Research Presentation / Final	20%
Total	100%

FINA 7397 – Stock Analysis in Investment Banking

Summary Syllabus

Class 1

- Part 1 – Discuss Financial Intermediation**
- Part 2 – Quick Analysis of a Hipgnosis Song Fund (SONG.L)**
- Part 3– Review of Financial Concepts**
- Part 4– Brief Review of Financial Statements**
- Part 5 – Practical Work & Analysis**
- Part 6 – Video – Understanding Oil & Gas Assets**
- Class 2 Assignment & Discussion**

Class 2

- Part 1 - Review of Finance Fundamentals**
- Part 2 - Mechanics of Analyzing a Company**
- Part 3 - Understand the Company Asset - Discussion of Oil & Gas Reserves**
- Part 4A - Review of Spring Semester Class “Capstone” EOG Resources Research Report**
- Part 4B - Review of Spring Semester Class EOG Resources Research Report**
- Part 5 - _Start Analysis of Comstock Resources (CRK) – Class Project**
- Part 6 - Review & Pross on CRK Class Report**
- Class 3 Assignment & Discussion**

Class 3

- Part 1A - Interest Rates Rule the Financial World**
- Part 1B - Interest Rates Rule the Financial World**
- Part 2 - The Auction Market & Price Discovery**
- Part 3 - Mechanics of Public Company Valuation**
- Part 4 - Review & Progress on CRK Class Report**
- Part 5 - _Detailed Analysis of Hipgnosis Song Fund (SONG.L)**
- Class 4 Assignment & Discussion**

Class 4

- Part 1 - Total Enterprise Value (TEV)**
- Part 2A - Discussion of the Auctions Market & Price Discovery**
- Part 2B - How Does TEV Relate to the Auction Market?**
- Part 3 - Review & Progress on CRK Class Report**
- Part 4 - Analysis of Viteese Energy (VTS)**
- Class 5 Assignment & Discussion**

Class 5

- Part 1 - Review of Traditional Valuation Metrics**
- Part 2 - Review of Important Financial Accounting Concepts**
- Part 3 - Review & Progress on CRK Class Report**
- Part 4 - Analysis of W&T Offshore (WTI)**
- Class 6 Assignment & Discussion**

Class 6

- Part 1 - Finding Costs Analysis**
- Part 2 - Review & Progress on CRK Class Report**
- Part 3 - Analysis of Pioneer Oil & Gas (PXD)**
- Class 7 Assignment & Discussion**

Class 7

- Part 1A - Net Asse Value or Liquidation Analysis
- Part 1B - Create A Summary NAV Chart & Sensitivity Analysis
- Part 2 - Peer Group Analysis
- Part 3 - Analysis of Callon Petroleum (CPE)
- Part 4 - Review & Progress on CRK Class Report
- Class 8 Assignment & Discussion

Class 8

- Part 1 - Attributes of a Perfect Manufacturing Company
- Part 2 - Discussion & Calculation of Franchise Value
- Part 3 - Discuss the S&P 500 Index
- Part 4 - Analysis of Northern Oil & Gas (NOG)
- Part 5 - Review & Progress on CRK Class Report
- Class 9 Assignment & Discussion

Class 9

- Part 1 - What is Risk & How to Measure Risk
- Part 2A - Discussion & Calculation of Franchise Value
- Part 2B - How do Investors Assign Franchise Value (FV)?
- Part 3 - Discuss the S&P 500 Index
- Part 4 - Review & Progress on CRK Class Report
- Part 5 - Analysis of Ovintive Inc. (OVV)
- Class 10 Assignment & Discussion

Class 10

- Part 1 - Review & Discussion of the Balance Sheet
- Part 2 - Discussion & Calculation of Franchise Value
- Part 3 - Discuss the S&P 500 Index
- Part 4 - Analysis of ExxonMobil (XOM)
- Part 5 - Review & Finalize CRK Class Report
- Class 11 Assignment & Discussion

Class 11

- Part 1 - Review & Discussion of Changes in Cash Flow Statement (CCFS)
- Part 2 - Income Statement
- Part 3 - Analysis of Schlumberger (SLB)
- Part 4 - Students Prepare CRK Class Report
- Class 12 Assignment & Discussion

Class 12

- Part 1 - What are Index Funds?
- Part 2 - Review & Pros on CRK Class Report
- Part 3 - Analysis of Tesla Inc (TSLA)
- Class 12 Prepare for Final

Final

- Part 1 - Review of Take Home Final Exam
- Part 2 - Professor Levy Questions Students on CRK Class Report

FINA 7397 – Stock Analysis In Investment Banking

Adjunct Professor Van Levy

Detailed Course Syllabus

Class 1

Part 1 – Discuss Financial Intermediation

- What is Financial Intermediation and how does it work?
- What is an investment bank & what do they do?
 - How are they organized?
 - What are the key departments and how do they interface?
- What are the Capital Markets and what do they do?
- Capital Formation - the “Life-Blood of Capitalism”
 - Efficient Capital Allocation is the Key to Wealth Creation
- Who consumes or uses capital?
- How to create New Stock or underwrite an Initial Public Offering (IPO)
 - What is a Primary Offering
 - What is a Secondary Offering
- What is “Used Stock” and how does it trade?
- Discussion of the Research function within an investment bank.

Part 2 – Analysis of a Music Public Company

- Drive by analysis of Hipgnosis Songs Fund Limited (SONG.L) - www.hipgnosissongs.com
 - Listen to company presentation
 - Look at company presentation
 - What do they do?
 - Is this company a Variable Music Bond?
 - How do they differentiate from other companies?
 - Quickly pull apart sources & uses of cash flow financial data to see if company story matches financial results
 - Acquisition history & CAPEX
 - Funding
 - Paying dividends – for how long?
 - Hipgnosis is listed on London Stock Exchange (LSE)
 - What is a stock exchange?
 - What is its function?
 - What are stock exchanges around the world?

Part 3– Review of Financial Concepts

- Review of basic financial concepts
 - Compounding
 - Discounting
 - Interest Rates
 - Capital structure
 - Bond Theory

- Valuation drills
- Oil & Gas Drilling calculations

Part 4– Brief Review of Financial Statements

- Income Statement
- Changes in Cash Flow
- Balance Sheet

Part 5 – Practical Work & Analysis

- What is a research report used for?
- What are the components of a research report?
- Review of Spring Semester’s Research Report – EOG Resources (EOG)
- Review of EOG’s model

Part 6 – Video – Understanding Oil & Gas Assets

Class 2 Assignment & Discussion

- Drive by analysis for Comstock Resources (CRK)
 - Go to yahoo finance
 - Look at chart for 1 month, 6 months, 1 & 2 years & for life
 - Go to website
 - Look at presentation
 - Pull up & save SEC 10-K data
 - Pull up & save 10-Q data for 2023 & 2022
 - Save all in a dedicated Comstock Resources File
 - Prepare for discussion in Class 2

Class 2

Part 1 - Review of Finance Fundamentals

- **Cornerstone of Finance - The Exponential Function**
 - How cofounding works
 - Compound Interest is based on the exponential function
 - Reverse Compounding – Discounting
 - Compounding & discounting calculation drills
 - The importance of compounding in the real world

- **Bond Theory**
 - What is a bond & how does it work?
 - Calculating bond prices
 - Why do bonds sell at a discount or premium?
 - Bond price sensitivity to changes in interest rates
 - Bond calculation drills
 - What is IRR?
 - Bond duration discussion & calculation
 - Practical use
 - Creating zero coupon bonds

- **The Cousins of Bonds**
 - Annuities
 - Perpetuities

Part 2 - Mechanics of Analyzing a Company

- Discuss key steps in analysis process
- Why Focus on Cash?

Part 3 - Understand the Company Asset - Discussion of Oil & Gas Reserves

- What are oil & gas reserves?
- How are they classified?
- What are the Reserve Categories? Risk Levels
 - Proved Developed
 - Proved Undeveloped
 - Probable Reserves

Part 4A - Review of Spring Semester Class “Capstone” EOG Resources Research Report

- **Why write a research report (RR)?**
 - Who consumes a RR?

- **Discussion of essential elements of a comprehensive research report**
 - Page 1 – Company statistical information
 - Page 1 – Selling thesis, stock recommendation, price target with rationale
 - Page 2 – Company Overview
 - Page 3 – Why Buy the Company Stock?
 - Page 4 – Company efficiency discussion & cost structure analysis

- Page 5 – NAV Per share Analysis - How the company grows value per share
- Page 6 – Financial Leverage Analysis
- Page 6 – Costs to Manufacture Reserves, Operating Costs and Margins
- Page 7 – Story Board of relevant operating data trends
- Page 8 – Unrecognized and Un-booked or Hidden Assets
- Page 9 – Franchise Value - Company Accretion of Value? Analysis through NAV per share.
- Page 10 – Chart analysis
 - Is Today a Good Entry Point to Purchase the Company’s Shares
- Pages 11 – Chart analysis
 - Company stock price driver?
 - Where are we in the cycle?
 - Geopolitical events
- Page 12 – Commodity Price Deck – Short Term & Long Term
- Page 13 – Valuation & Price Target based on Net Asset Value
- Page 14 – Calculating Franchise Value – Discussion of Total Enterprise Value (TEV)
- Page 15 – Valuation & Price Target based on TEV Multiples
- Page 16 – Historic Trading Multiples & Valuation Range
- Page 17 – Dividend Analysis
- Page 18 – Execution, Financial Discipline & Free Cash Flow Generation
- Page 19 – Commodity Price Hedging

Part 4B - Review of Spring Semester Class EOG Resources Research Report

- Page 20 & 21 – Capital Budget
- Page 22 – Finding Costs
- Page 23, 24 & 25 – Production, Wells Drilled, Acreage & Operations by Major Area
- Page 26 – Production by Operating Area
- Page 27 – Balance Sheet
- Page 28 – Coverage Ratios
- Page 29 – SEC PV10 Data
- Page 30 & 31 – Changes in SEC PV10 Categories
- Page 32 – Drilling Economics in 2021, Calculation of Drilling IRR
- Page 33 – Production & Commodity Prices
- Page 34 – Oil & Gas Revenues by Product
- Page 35 – Income Statement
- Page 36 – Sources & Uses of Cash
- Page 37 – Unit Cost & Margin Analysis
- Page 38 & 39 – Finding Costs

Part 5 - Start Analysis of Comstock Resources (CRK) – Class Project

- Assignment of Report Sections to Students
 - This class report is part of your grade
- Chart Analysis
 - Where has the company traded
 - Resistance levels
- Go to Sources and Uses of Cash and Analyze Flows of Cash
 - Cash Flow From Operations (CFFO)
 - Absorption of Cash in the Working Capital Cycle
 - Investing Activities
 - Generation of Free Cash Flow
 - Beginning Cash, Generation of Cash, Ending Cash
 -

- **How does CRK generate Revenues?**
 - What are the assets
 - Where are the assets located
 - Operating strategy
- **Story Board Analysis**
 - Growth is reserves, production per share
 - Growth in shares diluting per share metrics
 - How is growth effected?
 - Internal cash flow or debt, mergers?
- **NAV – Liquidation Value**
- **Franchise Value**
- **Reserve Composition**
 - PDP vs PUD
 - % Oil, % Gas
- **Economic Efficiency**
 - GP-ROI
 - CF-ROI

Part 6 - Review & Pross on CRK Class Report

Class 3 Assignment & Discussion

- **Drive by analysis for Hipgnosis Song Fund (SONG.L)**
 - Go to yahoo finance
 - Look at chart for 1 month, 6 months, 1 & 2 years & for life
 - Go to website
 - Look at presentation
 - Pull up & save SEC 10-K data
 - Pull up & save 10-Q data for 2023 & 2022
 - Save all data in a dedicated Hipgnosis Song Fund File
 - Prepare for discussion in Class 3

Class 3

Part 1A - Interest Rates Rule the Financial World

- **What Are Interest Rates?**
 - **Interest Rates Determined by Auction Market**
 - **Price Discovery**

- **Components of Interest Rates**
 - **Real Interest Rate**
 - **Inflation Rate**
 - **Risk Premium or Default Risk Premium**
 -

- **Why Are Interest Rates Important?**
- **How Are Interest Rates Used in Valuations?**
- **How Are Interest Rates Used to Allocate Capital?**

- **Capital Structure**
 - **Components of the Cap Stack**
 - **Priority of Claims**

Part 1B - Interest Rates Rule the Financial World

- **Back to Bond Theory - Central to Finance**
- **Companies are Variable Bonds**
 - **Cash flows have monthly cash flow variations**
 - **Companies affected by the business cycle and variation in Company drivers**
- **Valuation Focus - Net Income versus Cash Flow**

Part 2 - The Auction Market & Price Discovery

- **What is the auction market?**
- **How are “prices” discovered versus dictated?**
- **What makes an auction market efficient?**
- **What securities or assets are sold in an auction market?**

Part 3 - Mechanics of Valuation

- **Calculate Liquidation Value – “Kill Value”**
- **Study Levy’s Discounted Oil & Gas Cash Flow (DCF) Model**
- **Follow the programmed Logic Path**
- **You are required to create a DCF model for an E&P Company**
- **Follow the flow chart**

Part 4 - Review & Progress on CRK Class Report

Part 5 - Analysis of Hipgnosis Song Fund (SONG.L)

- **Chart Analysis**
 - **Where has the company traded**
 - **Resistance levels**

- **Go to Sources and Uses of Cash and Analyze Flows of Cash**
 - **Cash Flow From Operations (CFFO)**
 - **Absorption of Cash in the Working Capital Cycle**
 - **Investing Activities**
 - **Generation of Free Cash Flow**
 - **Beginning Cash, Generation of Cash, Ending Cash**

- **How does SONG.L Generate Revenues**
 - **What are the assets**
 - **Where are the assets located**
 - **Operating strategy**

- **Review and Study Company Presentation**
- **Growth through acquisition Discussion.**
 - **Financing by issuing equity**
 - **Share dilution**
 - **Discuss dependence on balance sheet**
 - **Can SONG.L continue to pay dividends?**

- **Is SONG.L a variable music bond?**

- **Story Board Analysis**
 - **Growth is song library, gross revenues**
 - **Growth in shares diluting per share metrics**
 - **How is growth effected?**
 - **Internal cash flow or debt, mergers?**
 - **Does SONG.L pay dividends?**
 - **How much**
 - **Can the company continue to grow dividends**
 - **If SONG.L cut dividends, what will happen to the stock price.**

- **NAV – Liquidation Value**
- **Franchise Value**
- **Company Risks**

Class 4 Assignment & Discussion

- **Drive by analysis for Vitesse Energy (VTS)**
 - **Go to yahoo finance**
 - **Look at chart for 1 month, 6 months, 1 & 2 years & for life**
 - **Go to website**
 - **Look at presentation**
 - **Pull up & save SEC 10-K data**
 - **Pull up & save 10-Q data for 2023 & 2022**

- **Save all data in a dedicated Pioneer Resources (PXD) File**
 - **Prepare for discussion in Class 4**

Class 4

Part 1 - Total Enterprise Value (TEV)

- What is TEV?
- Derive TEV from:
 - $\text{Assets} - \text{Liabilities} = \text{Owners Equity}$
- What does TEV measure and mean?
- How is TEV used in the Valuation of Companies
- What is Franchise Value?
- How is Franchise Value measured?
- What is price discovery & why is it important?
- How does the stock price relate to TEV?
- Why do stock prices vary?
- How do we measure & calculate Franchise Value

Part 2A - Discussion of Auctions Market & Price Discovery

- What is an auction market?
- Why does it exist?
- What is “Price Discovery” & why is it important?
- Are Trading Exchanges auction markets?
- Why do Trading Exchanges exist?
- Examples of trading exchanges
- Discussion of stock liquidity and important
- Why is the Stock Float important?

Part 2B - How Does TEV Relate to the Auction Market?

- Auction of shares resulting in price per share drives TEV
- TEV equals investors assessment of the Company's asset value plus its franchise value
- Why do some companies sell at premium to NAV are a high TEV/EBITDA multiple?

Part 3 - Review & Progress on CRK Class Report

Part 4 - Analysis of Viteese Energy (VTS)

- Chart Analysis
 - Where has the company traded
 - Resistance levels
- Go to Sources and Uses of Cash and Analyze Flows of Cash
 - Cash Flow From Operations (CFFO)
 - Absorption of Cash in the Working Capital Cycle
 - Investing Activities
 - Generation of Free Cash Flow
 - Beginning Cash, Generation of Cash, Ending Cash
- What does VTS do to generate Revenues

- **What are the assets**
- **Where are the assets located**
- **Operating strategy**
- **Story Board Analysis**
 - **Growth is reserves, production per share**
 - **Growth in shares diluting per share metrics**
 - **How is growth effected?**
 - **Internal cash flow or debt, mergers?**
- **NAV – Liquidation Value**
- **Franchise Value**
- **Reserve Composition**
 - **PDP vs PUD**
 - **% Oil, % Gas**
- **Economic Efficiency**
 - **GP-ROI**
 - **CF-ROI**

Class 5 Assignment & Discussion

- **Drive by analysis for W&T Offshore (WTI)**
 - **Go to yahoo finance**
 - **Look at chart for 1 month, 6 months, 1 & 2 years & for life**
 - **Go to website**
 - **Look at presentation**
 - **Pull up & save SEC 10-K data**
 - **Pull up & save 10-Q data for 2023 & 2022**
 - **Save all data in a dedicated Hipgnosis Song Fund File**
 - **Prepare for discussion in Class 5**

Class 5

Part 1 - Review of Traditional Valuation Metrics

- Total Enterprise Value (TEV/EBITDA)
- Price/Cash Flow
- Efficiency Measures
 - ROA, ROI & ROE
- Investment calculations
 - IRR,
 - PV & NPV
 - PVI
 - Payout
 - Cash-On-Cash Analysis
- DCF Analysis
- Multiple Analysis
- Peer Group Comparison
- Full Cycle ROI and Capital Efficiency

Part 2 - Review of Important Financial Accounting Concepts

- Four Basic Tenants of Financial Accounting
 - How to apply in a valuation setting?
- Discussion consumption of an asset
- Discussion of DD&A & relation to CAPEX

Part 3 - Review & Progress on CRK Class Report

Part 4 - Analysis of W&T Offshore (WTI)

- Discuss non-operated oil & gas model
- Chart Analysis
 - Where has the company traded
 - Resistance levels
- Go to Sources and Uses of Cash and Analyze Flows of Cash
 - Cash Flow From Operations (CFFO)
 - Absorption of Cash in the Working Capital Cycle
 - Investing Activities
 - Generation of Free Cash Flow
 - Beginning Cash, Generation of Cash, Ending Cash
- How does VTS do to generate Revenues
 - What are the assets
 - Where are the assets located
 - Operating strategy
- Story Board Analysis
 - Growth is reserves, production per share
 - Growth in shares diluting per share metrics
 - How is growth effected?
 - Internal cash flow or debt, mergers?
- NAV – Liquidation Value

- **Franchise Value**
- **Reserve Composition**
 - **PDP vs PUD**
 - **% Oil, % Gas**
- **Economic Efficiency**
 - **GP-ROI**
 - **CF-ROI**

Class 6 Assignment & Discussion

- **Drive by analysis for Pioneer Resources (PXD)**
 - **Go to yahoo finance**
 - **Look at chart for 1 month, 6 months, 1 & 2 years & for life**
 - **Go to website**
 - **Look at presentation**
 - **Pull up & save SEC 10-K data**
 - **Pull up & save 10-Q data for 2023 & 2022**
 - **Save all data in a dedicated Hipgnosis Song Fund File**
 - **Prepare for discussion in Class 6**

Class 6

Part 1 - Finding Costs Analysis

- **The finding cost analysis spreadsheet will be provided.**
 - SEC data is required to fill out the analytical spreadsheet
 - The data is located in the 10-K
 - Other data is derived from the company cash flow model.
- **What are Findings Costs?**
- **How to calculate?**
- **How do they relate to DD&A**
- **What are reserve replacement rates?**
 - What do they mean?
- **What does the reserve life mean?**
 - How does this relate to re-investment risks?
- **Discuss the SEC reserve reconciliation disclosure**
 - How do we use the data
- **What is the SEC PV10?**
 - What does it represent and how does it relate to a DEC analysis?
- **Calculate efficiency measures**
 - GP-ROI
 - CF-ROI
- **Discussion of cash on cash returns and relationship to DCF analysis & IRR**

Part 2 - Review & Progress on CRK Class Report

Part 3 - Analysis of Pioneer Oil & Gas (PXD)

- **Chart Analysis**
 - Where has the company traded
 - Resistance levels
- **Go to Sources and Uses of Cash and Analyze Flows of Cash**
 - Cash Flow From Operations (CFFO)
 - Absorption of Cash in the Working Capital Cycle
 - Investing Activities
 - Generation of Free Cash Flow
 - Beginning Cash, Generation of Cash, Ending Cash
- **How does PXD do to generate Revenues**
 - What are the assets
 - Where are the assets located
 - Operating strategy
- **Story Board Analysis**
 - Growth is reserves, production per share
 - Growth in shares diluting per share metrics
 - How is growth effected?
 - Internal cash flow or debt, mergers?

- **NAV – Liquidation Value**
- **Franchise Value**
- **Reserve Composition**
 - **PDP vs PUD**
 - **% Oil, % Gas**

- **Economic Efficiency**
 - **GP-ROI**
 - **CF-ROI**

Class 7 Assignment & Discussion

- **Drive by analysis for Callon Petroleum (CPE) – Overleverage E&P Company**
 - **Go to yahoo finance**
 - **Look at chart for 1 month, 6 months, 1 & 2 years & for life**
 - **Go to website**
 - **Look at presentation**
 - **Pull up & save SEC 10-K data**
 - **Pull up & save 10-Q data for 2023 & 2022**
 - **Save all data in a dedicated Hipgnosis Song Fund File**
 - **Prepare for discussion in Class 7**

Class 7

Part 1A - Net Asset Value or Liquidation Analysis

- Student will be sent an oil gas reserve DCF model
- Discussion on all the model inputs
 - Generate decline curves
 - PDP curves
 - PUD curves
- Discussion on all the model outputs
 - PV & NPV
 - IRR
 - Cash on Cash returns
 - Unit metrics in \$/boe and % margins
- Commodity Prices Assumptions & Discounts to Arrive at Realized Prices
- Sensitivity Analysis
 - Commodity prices
 - CAPEX & Opx Costs
- How is the DCF model used in the NAV
- In-Ground Valuation (\$/boe)

Part 1B - Create A Summary NAV Chart & Sensitivity Analysis

- Students provided a NAV Chart & Spreadsheet
- Constant Long Term Pricing NAV analysis for 5 years
- Using NAV to understand franchise value and management effectiveness

Part 2 - Peer Group analysis

- A Peer group valuation grid in excel will be provided to students
- How is this valuation grid used?

Part 3 - Analysis of Callon Petroleum (CPE)

- How does this high leverage affect trading multiples & valuation?
- Chart Analysis
 - Where has the company traded
 - Resistance levels
- Go to Sources and Uses of Cash and Analyze Flows of Cash
 - Cash Flow From Operations (CFFO)
 - Absorption of Cash in the Working Capital Cycle
 - Investing Activities
 - Generation of Free Cash Flow
 - Beginning Cash, Generation of Cash, Ending Cash
- How does CPE generate Revenues
 - What are the assets
 - Where are the assets located
 - Operating strategy
- Story Board Analysis

- Growth is reserves, production per share
- Growth in shares diluting per share metrics
- How is growth effected?
 - Internal cash flow or debt, mergers?
- NAV – Liquidation Value
- Franchise Value
- Reserve Composition
 - PDP vs PUD
 - % Oil, % Gas
- Economic Efficiency
 - GP-ROI
 - CF-ROI

Part 4 - Review & Progress on CRK Class Report

Class 8 Assignment & Discussion

- Drive by analysis for Northern Oil & Gas (NOG)
 - Go to yahoo finance
 - Look at chart for 1 month, 6 months, 1 & 2 years & for life
 - Go to website
 - Look at presentation
 - Pull up & save SEC 10-K data
 - Pull up & save 10-Q data for 2023 & 2022
 - Save SEC all & relevant data to a dedicated Fund File
 - Prepare for discussion in Class 8

Class 8

Part 1 - Attributes of a Perfect Manufacturing Company

- Discuss key elements
- Use of Story Board

Part 2 - Discussion & Calculation of Franchise Value

- Calculation of NAV for a series of years
 - Why include dividends paid on analysis
 - Is NAV increasing or is accretion of value occurring
 - Measure the value of accretion or dilution of value
 - What is the compound rate of accretion?

Part 3 - Discuss the S&P 500 Index

- What does it measure?
- What are the components of the index and their weighting?
- Has the S&P 500 accreted value?

Part 4 - Analysis of Northern Oil & Gas (NOG)

- Discuss non-operated oil & gas model?
 - Selling Oil & Gas drilling support services
 - Products
 - Geographic Areas
- Chart Analysis
 - Where has the company traded
 - Resistance levels
- Go to Sources and Uses of Cash and Analyze Flows of Cash
 - Cash Flow From Operations (CFFO)
 - Absorption of Cash in the Working Capital Cycle
 - Investing Activities
 - Generation of Free Cash Flow
 - Beginning Cash, Generation of Cash, Ending Cash
- How does NOG generate Revenues
 - What are the assets
 - Where are the assets located
 - Operating strategy
- Story Board Analysis
 - Growth is reserves, production per share
 - Growth in shares diluting per share metrics
 - How is growth effected?
 - Internal cash flow or debt, mergers?
- NAV – Liquidation Value
- Franchise Value
- Economic Efficiency
 - GP-ROI

- **CF-ROI**

Part 5 - Review & Progress on CRK Class Report

Class 9 Assignment & Discussion

- **Drive by analysis for Ovintiv Inc (OVV)**
 - **Go to yahoo finance**
 - **Look at chart for 1 month, 6 months, 1 & 2 years & for life**
 - **Go to website**
 - **Look at presentation**
 - **Pull up & save SEC 10-K data**
 - **Pull up & save 10-Q data for 2023 & 2022**
 - **Save SEC all & relevant data to a dedicated Fund File**
 - **Prepare for discussion in Class 9**

Class 9

Part 1 - What is Risk & How to Measure Risk

- Review of Standard Deviation
- Calculating Standard Deviation
- Unique & Systemic Risk
 - Ratios to Measure Risk
- Review of Modern Portfolio Theory
 - Practical work effects

Part 2A - Discussion & Calculation of Franchise Value

- Calculation of NAV for a series of years
 - Why include dividends paid on analysis
 - Is NAV increasing or is accretion of value occurring
 - Measure the value of accretion or dilution of value
 - What is the compound rate of accretion?

Part 2B - How do Investors Assign Franchise Value (FV)?

- Premium to NAV
- Negative FV – Discount to NAV

Part 3 - Discuss the S&P 500 Index

- What does it measure?
- What are the components of the index and the their weighting?
- Has the S&P 500 accreted value?

Part 4 - Review & Progress on CRK Class Report

Part 5 - Analysis of Ovintive Inc. (OVV)

- Chart Analysis
 - Where has the company traded
 - Resistance levels
- Go to Sources and Uses of Cash and Analyze Flows of Cash
 - Cash Flow From Operations (CFFO)
 - Absorption of Cash in the Working Capital Cycle
 - Investing Activities
 - Generation of Free Cash Flow
 - Beginning Cash, Generation of Cash, Ending Cash
- How does OVV generate Revenues
 - What are the assets
 - Where are the assets located
 - Operating strategy
- Story Board Analysis
 - Growth is reserves, production per share
 - Growth in shares diluting per share metrics

- **How is growth effected?**
 - **Internal cash flow or debt, mergers?**
- **NAV – Liquidation Value**
- **Franchise Value**
- **Economic Efficiency**
 - **GP-ROI**
 - **CF-ROI**

Class 10 Assignment & Discussion

- **Drive by analysis for the Big Boy - ExxonMobil (XOM)**
 - **Go to yahoo finance**
 - **Look at chart for 1 month, 6 months, 1 & 2 years & for life**
 - **Go to website**
 - **Look at presentation**
 - **Pull up & save SEC 10-K data**
 - **Pull up & save 10-Q data for 2023 & 2022**
 - **Save all data in a dedicated Hipgnosis Song Fund File**
 - **Prepare for discussion in Class 10**

Class 10

Part 1 - Review & Discussion of the Balance Sheet

- Review elements of the balance sheet
- What do they mean?
- Discuss working capital & permanency to support growth company
- Discuss full cost accounting vs successful efforts accounting
- Discuss Net PP&E and how it changes
- How to use the balance sheet with the income statement & changes in cash flow statement
- Discuss net income, dividends, net income after dividends & retained earnings

Part 2 - Discussion & Calculation of Franchise Value

- Calculation of NAV for a series of years
 - Why include dividends paid on analysis
 - Is NAV increasing or is accretion of value occurring
 - Measure the value of accretion or dilution of value
 - What is the compound rate of accretion?

Part 3 - Discuss the S&P 500 Index

- What does it measure?
- What are the components of the index and their weighting?
- Has the S&P 500 accreted value?

Part 4 - Analysis of ExxonMobil (XOM)

- Chart Analysis
 - Where has the company traded
 - Resistance levels
- Look in 10-K at Operating Segment Detail
 - What operating segment does XOM generate most of its Revenues & EBITDA
 - What country?
- Go to Sources and Uses of Cash and Analyze Flows of Cash
 - Cash Flow From Operations (CFFO)
 - Absorption of Cash in the Working Capital Cycle
 - Investing Activities
 - Generation of Free Cash Flow
 - Beginning Cash, Generation of Cash, Ending Cash
- How does XOM generate Revenues
 - What are the assets
 - Where are the assets located
 - Operating strategy
- Story Board Analysis
 - Growth is reserves, production per share
 - Growth in shares diluting per share metrics
 - How is growth effected?
 - Internal cash flow or debt, mergers?
- NAV – Liquidation Value
- Franchise Value

- **Economic Efficiency**
 - **GP-ROI**
 - **CF-ROI**

Part 5 - Review & Finalize CRK Class Report

Class 11 Assignment & Discussion

- **Drive by analysis for Schlumberger (SLB)**
 - **Go to yahoo finance**
 - **Look at chart for 1 month, 6 months, 1 & 2 years & for life**
 - **Go to website**
 - **Look at presentation**
 - **Pull up & save SEC 10-K data**
 - **Pull up & save 10-Q data for 2023 & 2022**
 - **Save SEC all & relevant data to a dedicated Fund File**
 - **Prepare for discussion in Class 11**

Class 11

Part 1 - Review & Discussion of Changes in Cash Flow Statement (CCFS)

- Review elements of the CCFS
- What do they mean?
- Discuss cash flow from operations before working capital (WC)
- Discuss WC absorption or investment
- Discuss Investment Component
- Discuss Financing Component
- Discuss Cash Generation Component
- Discuss Free Cash Flow Component
- Discuss Beg & Ending Cash Component

Part 2 - Income Statement

- What is the Income Statement?
 - Key Elements
 - How is gross margin and operating profit calculated?
 - How is Net Income Calculated?
 - How is EBITDA Calculated?
 - What does it mean
 - What are non-cash elements of Income Statement
 - Discuss the quality of earnings
 - How is NI used for valuation of a company

Part 3 - Analysis of Schlumberger (SLB)

- Chart Analysis
 - Where has the company traded
 - Resistance levels
- How is an Oil Service Company Different than an E&P Company?
- Go to Sources and Uses of Cash and Analyze Flows of Cash
 - Cash Flow From Operations (CFFO)
 - Absorption of Cash in the Working Capital Cycle
 - Investing Activities
 - Generation of Free Cash Flow
 - Beginning Cash, Generation of Cash, Ending Cash
- How does SLB generate Revenues
 - What are the assets
 - Where are the assets located
 - Operating strategy
 - Geographic Areas
- Story Board Analysis
 - Growth is reserves, production per share
 - Growth in shares diluting per share metrics
 - How is growth effected?
 - Internal cash flow or debt, mergers?
- NAV – Liquidation Value
- Franchise Value

- **Economic Efficiency**
 - **GP-ROI**
 - **CF-ROI**

Part 4 - Students Prepare CRK Class Report

Class 12 Assignment & Discussion

- **Drive by analysis for Tesla Inc (TSLA)**
 - **Go to yahoo finance**
 - **Look at chart for 1 month, 6 months, 1 & 2 years & for life**
 - **Go to website**
 - **Look at presentation**
 - **Pull up & save SEC 10-K data**
 - **Pull up & save 10-Q data for 2023 & 2022**
 - **Save SEC all & relevant data to a dedicated Fund File**
 - **Prepare for discussion in Class 12**

Class 12

Part 1 - What are Index Funds?

Part 2 - Review & Pross on CRK Class Report

Part 3 - Analysis of Tesla Inc (TSLA)

- **Chart Analysis**
 - Where has the company traded
 - Resistance levels
- **How is a Car Manufacturing similar & Different from an EP Company that Manufactures Reserves?**
- **Go to Sources and Uses of Cash and Analyze Flows of Cash**
 - Cash Flow From Operations (CFFO)
 - Absorption of Cash in the Working Capital Cycle
 - Investing Activities
 - Generation of Free Cash Flow
 - Beginning Cash, Generation of Cash, Ending Cash
- **How does SLB generate Revenues**
 - What are the assets
 - Where are the assets located
 - Operating strategy
 - Geographic Areas
- **Story Board Analysis**
 - Growth is reserves, production per share
 - Growth in shares diluting per share metrics
 - How is growth effected?
 - Internal cash flow or debt, mergers?
- **NAV – Liquidation Value**
- **Franchise Value**
- **Economic Efficiency**
 - GP-ROI
 - CF-ROI

Class 12 Prepare for Final

- **Complete Take Home Final Examination**
- **Discuss in Class Final CRK Research Report – Comstock Resources**
 - Professor Levy acting as Portfolio Manager
 - Students Pitch CRK to Professor
 - Active question and answer session

Class Final

- **Discuss Take Home Final Examination**
- **Discuss All Elements of Class Research Report – Comstock Resources**