Oil & Gas Modeling: Course Outline

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BIWS Oil & Gas Modeling Course

The topics in Oil & Gas Modeling teach you everything you need to know about accounting, industry jargon, operating models, valuation, and merger and LBO models for **natural resource companies** – businesses that earn money by extracting energy or minerals from the ground.

- In total, there are **95 lessons** with accompanying Excel files as well as **15 quick reference guide PDFs** on key topics. That amounts to **nearly 36 hours of video** altogether – but you also get **full transcripts** (over 400,000 words total), so you can quickly skip to anything you need to review.
- **All the content is downloadable to your preferred device** (desktops, laptops, tablets, smartphones, etc.).
- **Easily keep track of your progress:** As you move through the lessons, you can check off what you've completed and what's still on your "to-do" list.
- **Fast answers to all your questions:** Our expert support team is standing by to answer any questions you have about any of the content, 365 days a year.
- **Quizzes and Certifications.** After you have completed the course, you will be eligible to take our challenging Certification Quiz. Once you pass the Quiz, you'll be issued a Certificate that you can add to your resume / CV and refer to in interviews.
- **Lifetime Access:** You also get **lifetime access**, so you can come back to the course whenever you need it – whether that's in 1 month, 1 year, or 10 years.
- **BONUS Major Case Study**: Explore an investment / stock pitch of Ultra Petroleum [UPL] and its $650 million acquisition of acreage in the Uinta Basin of Utah *(it's not an exaggeration to say this bonus case study really is an entire new course!)*

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"I'm Just 21 Years Old And Got An Offer By Barclays Capital Sao Paulo"

[redacted] 7:24 AM (13 hours ago)

to Breaking

Hi Brian, I want to thank you a lot! Breaking Into Wall Street is an amazing tool to increase your chances to get into Investment Banking and even Equity Research. I have just 21 years old and last year (2011) I got an offer by Barclays Capital to be an Intern of Sao Paulo, Brazil IBD (Investment Banking Division). I worked there for 6 months and now I am working at Nomura Securities in the Investment Banking Division too with a higher salary...I need to thank you again Brian, the course about the O&G sector helped me out a lot to understand and figure out comparables of this branch. Concerning giving some ideas to improve the website, you could detail more in some specific items of O&G and Banking, just to let us more close with a deep understanding of them. Sincerely, [redacted]

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Module 1: Overview, Accounting & Key Metrics

- In this module, you'll learn why and how natural resource companies operate differently from normal companies, and why you can't rely on traditional metrics when analyzing them.
- We'll compare the financial statements of XTO Energy and Exxon Mobil to those of normal companies, and you'll learn how each item is projected and how resource production drives the 3 statements.
- You'll also learn how to measure reserves and production, and how successful efforts accounting differs from full cost accounting.
- We conclude the module by analyzing key operating metrics and ratios for oil & gas companies.

Module 2: Oil & Gas Operating Model

- In this module, you'll construct a detailed operating model for XTO Energy, starting with its production, price hedging, and per-unit expenses, and then moving into its 3 financial statements.
- XTO has a significant amount of debt, so we will also create detailed debt schedules similar to what you see in advanced LBO models.
- Once the XTO model is complete, we'll jump into Exxon Mobil's filings and create a revenue and expense model for their upstream business on a region-by-region basis, and then look at a complete operating model for the company.
- Everything is based on the real SEC filings of both companies as well as equity research from Deutsche Bank, Credit Suisse, and RBC.

Module 3: Oil & Gas Valuation

- You'll learn how to value XTO Energy using public company comparables, precedent transactions, a DCF, and a Net Asset Value (NAV) model in this module.
- We'll start by covering the key differences in public comps and precedent transactions for oil & gas companies, including an example of how to adjust for non-recurring and one-time charges.
- Then you'll learn how a DCF is different and why it's not that useful when valuing an E&P-focused oil & gas company such as XTO.

- We'll wrap up the module by looking at the Net Asset Value (NAV) model in detail, including the concept, assumptions, revenue and expense projections, and other business segments to include.

Module 4: Oil & Gas Merger Model

- In this module, you'll complete a detailed merger model for Exxon Mobil and XTO Energy and learn how both companies thought about this record $41 billion transaction.
- After learning how to make the transaction assumptions, allocate the purchase price, and adjust the balance sheet, you'll learn how to modify the debt schedules and the financial statements to support combining all 3 financial statements.
- We will also examine oil & gas-specific synergies and go through oil & gas-specific accretion / dilution metrics such as NAV per share – before concluding with a contribution analysis, sensitivities, and commentary on the deal.

Module 5: Oil & Gas LBO Model

- This module will present a hypothetical scenario where a private equity firm, rather than Exxon Mobil, acquires XTO Energy in a leveraged buyout.
- We'll go through all the key steps from the assumptions, purchase price allocation, and debt schedules to how to modify the 3 financial statements and point out the key differences between oil & gas LBOs and those of normal companies.
- The module will conclude with an analysis of the key credit statistics and ratios for XTO as well as the returns to equity and debt investors under different assumptions – and you'll learn why natural resource companies are not the best LBO targets, based on the analysis here.

Module 6: Complex NAV Model: Data Gathering and Assumptions

- In the first module of the Ultra Petroleum [UPL] complex NAV model case study, you'll review investor presentations, SEC filings, equity research, earnings call transcripts, and other documents issued by the company itself and 3rd party sources.
- Using these sources, you will determine the proper numbers for key assumptions, such as the acreage and reserves in each region, the average EUR per well, the D&C and LOE costs, the price differentials, and the working interests and royalty rates.
- You'll also project future net wells drilled by location, and you'll think through the proper reserve credits and sensitivity toggles to set up for use later on in the case study.

Module 7: Complex NAV Model: PDP and PDNP Reserves and Production Forecasts

- In this next module of the case study, you'll consider all of UPL's Proved Developed (PD) Reserves together – it is impossible to analyze these on a per-well basis because no company, UPL included, discloses enough information to do so.
- For both the PDP and PDNP segments, you will assume an overall production decline rate and project how the reserves change over time.

- Once you've plotted the production decline curves, you'll use that information to calculate revenue, expenses, CapEx, cash flow, and discounted cash flow from the PD Reserves.

Module 8: Complex NAV Model: PUD, PROB, and POSS Reserves and Production in WY and PA

- In this module of the case study, you'll analyze UPL's more speculative reserves in Wyoming and Pennsylvania and make assumptions for future CapEx related to new wells drilled.
- You will modify the existing formulas from the PDP and PDNP segments and make them suitable for this segment of the company's business; you'll also have to support different regional assumptions for the annual decline rates, revenue, and expenses.
- We'll also teach you how to approximate the decline rates in the absence of company-provided figures; "risking" these reserves will be critical since they are more speculative, so we'll look at different approaches to that as well.

Module 9: Complex NAV Model: Uinta Acquisition

- Once you've analyzed the company's existing reserves and production prior to its acquisition, you'll turn your attention to the Uinta Basin acquisition in this next module of the case study.
- This region is 100% oil, so you'll have to make different assumptions for the price differentials, royalty rates, working interests, and per-well expenses.
- You'll also have to analyze PD Reserves and the PUD, PROB, and POSS Reserves all on the same spreadsheet since UPL had not yet grouped the region together with its existing reserves.

Module 10: Complex NAV Model: Calculating NAV and Making an Investment Recommendation

- In this final module of the case study, you'll put together all the pieces to calculate UPL's Implied NAV per Share under different scenarios, and you'll use the output of that analysis to make an investment recommendation for the company.
- You'll also answer the original question we posed at the start of this case study: Was the market right to penalize Ultra Petroleum for its acquisition of the Uinta Basin acreage?
- In addition to answering those questions, you'll also build in support for other features critical to an oil & gas model, such as hedges, book vs. cash tax differences, NOLs, accelerated depreciation, and tangible vs. intangible drilling costs (IDC).
- **This final module helps you answer the question that all other financial modeling training programs miss entirely:** what the point of a model is, and how to use its output under different scenarios to make high-stakes decisions that involve large amounts of money.

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