

UNIVERSITY of
HOUSTON

C. T. BAUER COLLEGE of BUSINESS

FINA 7372/4372 , MH138
Upstream Economics
Fall 2021

Instructor: Dom Berta
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Course Objectives:

The objectives of the course are to understand the business decisions involved with the exploration and production of oil and gas, including dealing with high levels of risk and uncertainty, to be able to prepare and analyze cash flow forecasts for oil and gas production operations.

Additionally, the course will propose a first introduction to Decision Analysis and Portfolio Management, helped with several Case Studies. The detailed schedule of the class is at the end of this document.

Instructor:

Dom Berta has been working in the oil and gas industry for 39 years in executive, managerial and professional positions, be they finance, business development and engineering. He teaches FINA 7397, "Decision Analysis", and this course FINA 7372, "Upstream Economics". He also teaches "Finance to non-Finance managers" as part of the E-education program at Bauer.

Recommended Books:

"Project Economics and Decision Analysis, Volume 1, 2nd ed," M. A. Mian (PennWell Publishing, 2011)

"Introduction to Decision Analysis", David Skinner - ISBN-13: 978-0964793866 / ISBN-10: 0964793865

Course Materials The course material will consist of (1) lecture notes and other reading material relating to the analytical frameworks used in the course and case studies of "real-life" decision-making situations that invite students to bring together their knowledge and apply it to situations that challenge top-management. One case study needs to be downloaded from "The Case Center" at <https://www.thecasecentre.org/educators/products/view?id=134720>.

The lecture notes will be posted on Blackboard.

Class Content

Class time will be divided between lectures on the analytic material and discussion of cases that highlight the practical management issues raised by the theoretical frameworks. The cases are carefully chosen to do much more than simply illustrating the concepts covered in the lectures. The cases will often point to ambiguities in the concepts or invite attention to subtle issues that do not usually come through in the study of the text-book. The assignment of cases and the focus questions to help in the preparation or analysis of these cases are clearly spelt out in the syllabus below, and the case discussions are an integral part of the course. Class attendance is very important and strongly encouraged.

Course Requirements:

Students will be required to present both written work and oral analysis of the cases. The written work will involve homework exercises and case reports. The case report assignments and their due dates are clearly spelt out below. Oral analysis will be presented in case discussions. I expect students to have read the cases and prepared the assignment questions prior to the class session. Inadequate preparation not only means losing grading points but also lowers the entire class standard.

Grading:

The grading weights of the course-work are tentatively as under:

1. Quizzes - 10%
2. Homework assignments (*excluding case studies reports*)- 10%
3. Case Study # 1 report (Individual) - 10%
4. Case Study #2 report (Group) - 10%
5. Case Study #3 report (Group) - 10%
6. Final - 40%
7. Class contribution/participation - 10%

Class participation reflects the standard of contribution to class discussions, especially in the cases. In terms of grading criteria for case discussions, I will look for whether the student (1) has thoroughly prepared the case, (2) is a good listener, i.e., can link his or her arguments to the comments of others, and (3) is willing to be “creative” in offering new ideas. Please see Appendix B.

Class Participation:

I will use participation during our weekly sessions as a potential curve. Please note that I will frequently call on you for your input or opinions, so be prepared. Please review Appendix A for details.

Excused Absence Policy:

Regular class attendance, participation, and engagement in coursework are important contributors to student success. Absences may be excused as provided in the University of Houston Undergraduate Excused Absence Policy and Graduate Excused Absence Policy for reasons including: medical illness of student or close relative, death of a close family member, legal or government proceeding that a student is obligated to attend, recognized professional and educational activities where the student is presenting, and University-sponsored activity or athletic competition. Additional policies address absences related to military service, religious holy days, pregnancy and related conditions, and disability.

Recording of Class:

Students may not record all or part of class, livestream all or part of class, or make/distribute screen captures, without advanced written consent of the instructor. If you have or think you may have a disability such that you need to record class-related activities, please contact the Center for Students with Disabilities. If you have an accommodation to record class-related activities, those recordings may not be shared with any other student, whether in this course or not, or with any other person or on any other platform. Classes may be recorded by the instructor. Students may use instructor's recordings for their own studying and notetaking. Instructor's recordings are not authorized to be shared with anyone without the prior written approval of the instructor. Failure to comply with requirements regarding recordings will result in a disciplinary referral to the Dean of Students Office and may result in disciplinary action.

Syllabus Changes:

Due to the changing nature of the COVID-19 pandemic, please note that the instructor may need to make modifications to the course syllabus and may do so at any time. Notice of such changes will be announced as quickly as possible through both email and Blackboard posting.

Resources for Online Learning:

The University of Houston is committed to student success and provides information to optimize the online learning experience through our Power-On website. Please visit this website for a comprehensive set of resources, tools, and tips including: obtaining access to the internet, AccessUH, and Blackboard; requesting a laptop through the Laptop Loaner Program; using your smartphone as a webcam; and downloading Microsoft Office 365 at no cost. For questions or assistance contact UHonline@uh.edu.

UH Email:

Email communications related to this course will be sent to your Exchange email account which each University of Houston student receives. The Exchange mail server can be accessed via Outlook, which provides a single location for organizing and managing day-to-day information, from email and calendars to contacts and task lists. Exchange email accounts can be accessed by logging into Office 365 with your Cougarnet credentials or through Access UH. They can also be configured on IOS and Android mobile devices. Additional assistance can be found at the Get Help page.

Webcams:

Access to a webcam is required for students participating remotely in this course. Webcams must be turned on during all live course meetings to enable our discussions.

Honor Code Statement:

Students may be asked to sign an honor code statement as part of their submission of any graded work including but not limited to projects, quizzes, and exams: "I understand and agree to abide by the provisions in the Houston Graduate Academic Honesty Policy. I understand that academic honesty is taken very seriously, and, in the cases of violations, penalties may include suspension or expulsion from the University of Houston."

Hyflex Online Courses:

For Hyflex courses, class meetings will take place according to the class schedule. Some students may be physically in-class, whereas others will be online. The instructor may have to alter some of the class format, schedule, contents and grading percentages due to the application of this novel format.

Professor Evaluation:

The C.T. Bauer College of Business has a policy for its instructors to be evaluated by students to provide feedback on how their teaching performance can be improved. I encourage you to participate in the evaluation process. I am available throughout the course to receive any informal input. I rely on your input to improve the class each time I teach it.

Disability-Based Accommodations:

The C.T. Bauer College of Business would like to help students who have disabilities achieve their highest potential. To this end, students must register with the Center for Students with Disabilities (CSD) (Telephone 713-743-5400) It is the mission of the Disability Resource Center (DRC) to be committed to providing access to the educational environment for students. Students who may need accommodations should contact the DRC to discuss their needs and begin the registration process.

Appendix A:
Class Schedule, Topics and Assignments

| 8/23/2021 | | | |
|-----------|--|---|---|
| | FINA 4372/7372 - Upstream Economics Bauer School of Business, University of Houston Fall 2021 - Dom Berta | | |
| | <i>Note: I reserve the right to adapt this schedule, due to unplanned events</i> | | |
| Session | Date | Class Contents | Assignment for next class |
| #1 | 23-Aug | Course introduction Overview of Exploration and Production | |
| #2 | 30-Aug | Quiz over session #1 CashFlow analysis Forecasts NRI / WI CashFlow analysis (<i>exercise in class</i>) Projects Economics (<i>exercise in class</i>) | Homework #1 |
| #3 | 13-Sep | Review concepts session #2 Work HW #1 Quiz Discounted Cashflow (<i>exercise in class</i>) Project Economics Reserves Planning Portfolio Analysis | Homework #2 |
| #4 | 20-Sep | Work HW #2 Quiz Portfolio Analysis (ctd) Type of contract Introduction to Case Study "IW Oil & Gas" | Homework #3: Analysis of case study "IW Oil & Gas" |
| #5 | 27-Sep | <u>Industry Guest Lecturer</u> : Project Management (<i>Mike</i>) Short quiz Work Homework #3 Work case study: "IW O&G" Introduce case study: "Ambitious Oil Company" | Start working Homework #4 Analysis of "Ambitious Oil Company" |
| #6 | 4-Oct | <u>Oil Sim</u> : (<i>Paula</i>) Nominate blocks to be included in the licensing round, using geographic maps, and magnetic and gravimetric survey data. | Continue to work HW#4 |

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|-----|-------------|--|---|
| #7 | 11-Oct | <u>Oil Sim:</u> (Paula) Identify the most promising of the blocks offered for lease and prepare bids, using common risk segment maps and 2D seismic surveys. Initiate negotiation of farm-ins and farm-outs with other teams, after obtaining 3D seismic surveys | For next session, send the results of HW #4 "Ambitious Oil Company" |
| #8 | 18-Oct | <u>Oil Sim:</u> (Paula) Complete participation negotiations Wildcat and appraisal drilling Review progress and record financial results | |
| #9 | 25-Oct | Quiz #4 Work the case study "Ambitious Oil Company" | |
| #10 | 1-Nov | Aucerna software (Rose) | |
| #11 | 8-Nov | <u>Industry Presenter:</u> Manager, Investment Appraisal (Georges) Aucerna software (Rose) Introduction to the Absheron case | |
| #12 | 15-Nov | Introduction to Decision Analysis "Decision FrameWorks" software and tools | |
| #13 | 22-Nov | Decision Analysis, by "Decision FrameWorks" In-class case study "Lucky Oil" | |
| #14 | 29-Nov | <u>Industry Presenter:</u> Manager, Finance (John) In-class Portfolio Management exercise Introduction to the Absheron case | Write a paper on the "Absheron" case study (team) |
| #15 | Dec 6 | Work the Absheron case Contracts review | |
| | Dec 7 to 15 | Finals | |

Appendix B

Live Session Expectations

High/Above-Average Contributions Assessment Criteria:

- Contributions reflect thorough or exceptional preparation.
- Ideas offered are usually or always substantive, provide one or more significant insights and provide above average or highly productive direction for discussion among classmates.
- Challenges to the ideas of others, including authors of assigned readings, are well-substantiated and often or always presented persuasively.
- If this person were not present in our class sessions, the quality of discussion would be diminished markedly.

Medium/Average Contributions Assessment Criteria:

- Contributions reflect satisfactory preparation.
- Ideas offered are sometimes substantive, provide generally useful insights but seldom offer new and substantive direction for discussion among fellow classmates.
- Challenges to the ideas of others, including authors of assigned readings, are sometimes well-substantiated and sometimes presented persuasively.
- If this person were not present in our class sessions, the quality of discussion would be diminished.

Low/Below-Ave Contributions Assessment Criteria:

- Contributions reflect inadequate preparation.
- Ideas offered are seldom substantive, provide few, if any, insights and, at times, take the classroom discussion in an unproductive, insightful direction.
- Integrative comments and effective challenges are rare or absent.
- If this person were not present in our class sessions, the quality of discussion would not be changed or might improve.