

COURSE SYLLABUS

YEAR COURSE OFFERED: 2015

SEMESTER COURSE OFFERED: Spring

DEPARTMENT: Finance

COURSE NUMBER: 4373

NAME OF COURSE: Petrochemical and Refining Economics

NAME OF INSTRUCTOR: Donald Bellman

The information contained in this class syllabus is subject to change without notice. Students are expected to be aware of any additional course policies presented by the instructor during the course.

Learning Objectives

Understanding of the economics of and contemporary issues facing the global petrochemical and refining industries

Application of appropriate analytical tools for planning strategy, improving operations, and assessing investment opportunities

Major Assignments/Exams

A term paper proposing a general investment plan for a state oil company in a small oil exporting country that has just discovered major new oil and gas reserves. Up to 40% of final grade

Three tests on material covered in each of three sections of the course. Up to 40% of final grade

Ten homework problems and class participation comprise the balance of the final grade.

Required Reading

Selections from "Petroleum Refining in Nontechnical Language", Leffler, 2008

Selections from "Petrochemicals in Nontechnical Language", Burdick & Leffler, 2010

"Petrol Isteria 2010", Bellman, Case Study, 2011

Periodical articles and presentations:

"Complexity Index Indicates Refinery Capability, Value", Johnston, Oil & Gas Journal, 1996

"Study Updates Refinery Investment Cost Curves", Kaiser & Gary, Oil & Gas Journal, 2007

"Integrating Biofuels Into The Energy Industry", Shaheen, 2006

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“Using Real Options in Strategic Decision Making”, Walton & Giles, London Economics, 2000

“Will Real Options Take Root?” Teach, CFO Magazine, 2003

List of discussion/lecture topics

Fuel and crude oil characteristics
Tools for measuring financial performance
Value added analysis
Investment proposals
Refining complexity and investment costs
Refining processes and process economics
Blending economics
Structure and evolution of the global refining industry
Global trade and issues in refined products
Operations optimization and strategy
Refining unconventional crude oils
Gas processing and Fischer-Tropsch fuels
Petrochemical feedstocks and product chains
Biofuel production routes and economics
Olefin and aromatic chemical production and economics
Competition and uncertainty in investment decisions
Real options in refining
Opportunity costs and product segment profitability
Economics and evolution of selected petrochemical derivative chains