INTERNATIONAL EMERGING MARKETS PROJECT FINANCE

TERM AND YEAR

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Canvas: Please be sure to have your announcement and messaging notifications set to ASAP.

TEACHING ASSISTANTS

TA Name 1 xyzabc@columbia.edu

TA Office Hours

COURSE SHORT DESCRIPTION

This International Emerging Markets Project Finance (IPF) course will provide students with a strong practical and theoretical framework to be able to analyze complex international projects from first principles, and will cover both the structuring aspects of this financial discipline (commercial and legal frameworks, key risk and mitigants, financial modelling) as well as real-world project finance case studies.

Overall, the course provides a practical and quantitative approach to understanding project finance transactions; focuses on energy and infrastructure transactions in emerging markets; integrates principles of corporate finance with an understanding of specific technologies, industrial organization, regulatory framework and country-specific policies; examines foreign exchange issues, taxation, risk evaluation and mitigation and key contractual structures; explores the fundamentals of International Project Finance; and complements and adds to the current fundamentals of Project Finance course.

This course is relevant to students contemplating careers in financing international development projects, considering dual engineering/finance degrees, or working for developers/sponsors of international infrastructure projects or international financial organizations such as Multilateral development institutions (World Bank, Asia Development Bank, Inter-American Development Bank, Asia Development Bank, Asia Infrastructure Investment Bank).

COURSE DESCRIPTION

The IPF course will focus on deepening student’s academic knowledge and understanding of the financing strategies, structures and risk/return allocations for international infrastructure projects in developing countries. The course will specifically address and cover the dynamics of “South-South” infrastructure investment, financing and cooperation
across the BRIC (Brazil, Russia, India, China and South Africa) countries. It will also analyze the emergence and importance of new Global financial institutions such as the Asia Infrastructure Investment Bank, the new “World Bank for Asia” created by China. The course will also cover China’s new $8 Trillion “One Belt, One Road” infrastructure development policy linking China with Asia, Europe and East Africa.

The course will also analyze social and environmental risks in international projects and the current approach of financial institutions to assess and rank the social and environmental risks and impact of projects and related mitigation and monitoring measures required to ensure projects are developed in a sustainable manner.

**COURSE LEARNING OBJECTIVES**

Upon completion of the course, students will be able to:

- Identify and explain key aspects of financing for international infrastructure projects, potential sources of financing (export credit agencies, multilateral agencies, bonds, local capital markets) as well as currency and political risks
- Apply practical tools and skillsets to analyze risks and business opportunities associated with international infrastructure projects in key industry sectors, including but not limited to, power/renewable energy, oil and gas, mining and metals and infrastructure.
- Analyze and interpret how debt and equity are balanced within project financing structures and develop an appreciation in breadth and depth of the core financial documents and commercial contracts employed in the sector.

**ASSIGNMENTS**

*Designate the type for each assignment (A - group, B - group/individual, or C - individual).*

In order to avoid ambiguity that may lead to unintentional violations of the Honor Code, the description types for assignments have been standardized. They are specified in the table below.

<table>
<thead>
<tr>
<th>Type</th>
<th>Designation</th>
<th>Discussion of concepts</th>
<th>Preparation of submission</th>
<th>Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>group / group</td>
<td>Permitted with designated group*</td>
<td>By the group</td>
<td>Same grade for each member of the group</td>
</tr>
<tr>
<td></td>
<td>B</td>
<td>Permitted</td>
<td>Individually (No sharing of any portion of the submission)</td>
<td>Individual</td>
</tr>
<tr>
<td></td>
<td>C</td>
<td>None of any kind</td>
<td>Individually</td>
<td>Individual</td>
</tr>
<tr>
<td></td>
<td>D</td>
<td>(An optional category to be defined in detail by the individual faculty member)</td>
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* The designated group can be either an assigned study group or a self-selected one.
REQUIRED COURSE MATERIALS

Esty, Benamin. *Modern Project Finance: A Casebook*. Other class handouts will be provided along with additional recommended reading material.

CLASSROOM NORMS AND EXPECTATIONS

Class attendance is important as the course learnings will build progressively over the semester and provide the foundation for the group case study project. Class participation is encouraged and expected in analyzing the project case studies.

INCLUSION, ACCOMMODATIONS, AND SUPPORT FOR STUDENTS

At Columbia Business School, we believe that diversity strengthens any community or business model and brings it greater success. Columbia Business School is committed to providing all students with the equal opportunity to thrive in the classroom by providing a learning, living, and working environment free from discrimination, harassment, and bias on the basis of gender, sexual orientation, race, ethnicity, socioeconomic status, or ability.

Students seeking accommodation in the classroom may obtain information on the services offered by Columbia University’s Office of Disability Services online at [www.health.columbia.edu/docs/services/ods/index.html](http://www.health.columbia.edu/docs/services/ods/index.html) or by contacting (212) 854-2388.

METHOD OF EVALUATION

<table>
<thead>
<tr>
<th>Participation</th>
<th>20%</th>
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</thead>
<tbody>
<tr>
<td>Assignments</td>
<td>40%</td>
</tr>
<tr>
<td>Class Presentation</td>
<td>40%</td>
</tr>
</tbody>
</table>

Evaluation will be 20% from class participation, 40% from case study assignment/answers, and 40% from a class presentation.

At the start of the course students will grouped into teams to prepare a case study presentation to the class. Students will be required to analyze specific strategic, commercial and stakeholder issues/questions related to the project case study in a class presentation. Each team will present their case study, the remainder of the class is expected to contribute to the discussion, ask probing, thought provoking questions, and propose alternative solutions and strategies.

COURSE ROADMAP/SCHEDULE (SEE ATTACHED)
International Emerging Markets Project Finance - Course Schedule

Week 1:

Class 1: **International Emerging Markets Project Finance - Course Overview**
- Course Introduction and Objectives
- Overview of Project Finance
- History of Project Finance

Class 2: **Understanding Project Finance**
- Current Global trends
- How/when Project Finance is applied
- Necessary prerequisites for Project Financing
- Financial cash flow analysis

**Reading:** Chapter(s) from text book. Review **Nam Theun 2** Laos/Thailand power project case study handout for week 2.

Week 2:

Class 1: **Project Finance Participants and Structure**
- Key project contract parties
- Agent/Account Bank
- Typical project contracts
- Loan Agreement
  - Covenants/Reps and Warranties
  - Shareholder Agreement and Equity Subscription Agreement
  - Security Package
  - Events of Default
- Financial Model

Class 2: **Project Finance Sources of Capital**
- Commercial banks
- Export Credit Agencies
- Multilateral/Bilateral Development Banks
- Insurance market
- Equity – Mezzanine and Sub Debt
- **Nam Theun 2 Case Study discussion**

**Reading:** Read Chapter(s) from text book. Review and be prepared to discuss the **Mozal Project** case study
**Week 3:**

**Class 1:**  **Project Finance Risks and Mitigants**
- Construction/technology risk – Completion and Performance
- Sponsor risk
- Operational risk
- Revenue/Market risk
- Financial (FX, currency) risk
- Political risk
- Environmental and Social risk
- Independent Consultants

**Class 2:**  **Mozal Project case study**
- Project overview
- Key financing issues/challenges
- Project risks and mitigation
- Lessons learned and recommendations

**Reading:** Read Chapter(s) from text book. Review Petrozuata case study and be prepared to discuss.

**Assignment # 1 Due Week 4:** Read Case Study handout provided and answer the following:

I. Understand the Parties: Draw a box diagram showing the relationships of the participants
II. Understand the contracts and cash flows: Draw a box diagram showing the key contracts and direction of cash flows
III. Identify the Strengths of Project
IV. Identify the Weaknesses / Risks of Project
V. Evaluate the Environmental considerations and Regulatory/Political Environment
VI. State your Loan Recommendation
VII. Make suggested Changes if your Loan Recommendation is negative

**Week 4:**

**Class 1:**  **Case Study Class Presentation Overview (to be conducted Week 6)**

**CLASS PRESENTATION:**

**Guidelines:** Students will be divided into teams and will be required to analyze specific strategic, commercial and stakeholder issues/questions related to the project case study in a class presentation. Each team will present their case study, the remainder of the class is expected to contribute to the discussion, ask probing, thought provoking questions, and propose alternative solutions and strategies
**Situation:** Each team will represent different key project stakeholders (sponsor/investor, lenders, NGO, Host Government) and will be required to present to their respective boards, credit committees, Government Departments their analysis and recommendations for investing, lending or supporting the project.

**Analysis:** Analyze the key issues, strengths, risks and weaknesses of the project. Evaluate the financial projections. Identify the key risks, mitigants and the parties taking them. Here the student should apply, wherever appropriate, concepts from the course and its readings.

**Recommendation & Conclusion:** Make a recommendation on proceeding/not proceeding with the project. Defend your recommendation. If “No Go,” describe what must be done to make the decision a Go.

**Class 2:** Petrozuata Case Study
- Project Overview
- Key financing challenges
- Structural issues
- Risk allocation and mitigation
- Key lessons learned

**Reading:** Chapter(s) from text book. Read handout on “One Belt-One Road” and handout China Daily Newspaper Interview – Paul Clifford 2014

**Assignment #2 Due Week 5:** Review the project case study (provided). It will consist of a project overview and key information regarding the contract structure and terms. Using the information provided develop a project finance cash flow model and answer the following questions:

**I.** List the key financial model assumptions

**II.** Calculate the minimum and average DSCR as well as the LLCR and make recommendations regarding lender financial covenants

**III.** List conclusions on robustness of the project cash flows and key variables/risks impacting project cash flow sustainability

**IV.** Propose 3 sensitivity analysis scenarios and detail outcome
Week 5

Class 1: Project Finance Model
• Key elements of the project Finance cash flow model
• Relationship between project contracts, finance documents and cash flow model
• Creating the assumptions
• Sensitivity analysis, DSRA
• Key financial model lender metrics (DSCR, LLCR, PLCR)
• Project sponsor issues

Class 2: US-Asia Energy Market Developments and Outlook
• US Shale Oil/Natural Gas Market
• US LNG Export market
• South-South Infrastructure Financing Trends

Week 6

Class 1: Class presentation
Class 2: Class Presentation