

## **GIM Energy, Development, and Climate Change: Ghana and Morocco Syllabus**

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## GIM Program Purpose and Objectives

### GIM Purpose:

- For students to develop a foundation of knowledge about global sectors and economies through classroom learning and in-country immersion.

### GIM Objectives:

- To gain a foundational understanding of the macroeconomic trends, politics, history and culture of a country or region outside the United States.
- To experience firsthand through meetings with government officials and company representatives the economic ecosystems, business practices, market dynamics, and future opportunities and challenges of a particular country or region.
- To understand the framework of a particular business topic or issue through the lens of a specific country or region, including any challenges, opportunities, and strategies used to address it, and then apply the framework to other countries and regions throughout the world.
- To develop the skills necessary to collaborate with peers on a project that analyzes and proposes solutions to a particular problem within a sector of industry, including the skills required to set up and conduct independent business meetings abroad.

## Course Description and Objectives

### Course Objectives

This course will give students an opportunity to explore the following questions:

- How can developing nations expand access to electricity for all segments of their economies?
- What is the relationship between economic development and energy access?
- What generation technologies can cost-effectively meet the needs of developing economies ?
- How should international efforts to mitigate global climate change be factored into the decisions of developing nations?
- What financial and commercial models have been used to increase energy access in developing economies?
- Can alternate financial and commercial models can do a better job?
- What is the relationship between government policy and energy access in developing economies?

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- What tools can help us understand the economics, investment needs, and political ramifications of these intertwined issues?

## Topic Description

Electricity is a critical element of industrialized life—perhaps the most critical. Without it, nothing else works. Water, sanitation, food, healthcare, education, entertainment: without power these activities grind to a halt. Electricity powers the commercial and industrial sector of every country; without adequate supply, the economy will stagnate.

Nearly half of Africa's citizens lack access to electricity. In sub-Saharan Africa, the number is closer to two-thirds. Most Africans who have access use a fraction of what their counterparts in the US, Europe or China use.

Bringing electricity to Africa's many citizens that lack it today and increasing supply where it is inadequate are major challenges. How can the enormous infrastructure required be financed? How can businesses be induced to expand in Africa creating the economic growth needed to sustain a vibrant? How can this proceed in the context of global efforts to mitigate climate change?

There is often tension between the behavior and policy objectives of the wealthy west and needs of the poorer, developing world; western preferences have often led to outcomes that do not increase energy access quickly, cost-effectively, or at desirable scale. One of the key objectives of this course will be to better understand the dimensions of this tension.

Grappling with the energy access challenge offers future business leaders a chance to better understand the foundational role that electricity plays in modern life, to see first-hand the challenges faced by nations in the world's fastest growing continent, and to take part in the effort to solve a complex economic and environmental problem.

We will visit two African countries to better understand the electricity-development-climate nexus.

Morocco, the westernmost country in North Africa is mainly reliant on fossil-fuel for electricity production, most of which is imported. However, Morocco has significant potential for both solar and wind, and has established ambitious renewable energy objectives. Per capita electricity consumption is around 900 kWh per year.

Ghana, located in West Africa on the Atlantic coast, struggles with electric supply reliability and is attempting to improve this situation. About half of Ghana's electricity supply comes from fossil sources, with the balance coming from renewables, most of it hydroelectricity. Ghana has also established renewable energy targets but has goals for improving rural energy access and overall supply reliability, as well. Per capita electricity consumption in Ghana is around 320 kWh per year.

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## **Attendance Policy**

Due to the fact that this class meets only twice in person all regularly scheduled class sessions are mandatory without exception. There will be one optional session on basic energy concepts, technologies, and economics preceding our first formal session. If a student misses a class session, they are in danger of failing the class and it is at the professor's discretion as to whether it can be excused.

## **Role of the In-Country Advisor**

Throughout your GIM trip, you will be accompanied by an in-country advisor, Arlene Johnson, who is a staff member at Kellogg. The in-country advisor is responsible for the integrity and quality of the in-country experience. Among other logistical roles during the trip, he or she will be assessing each student's level of participation during the plenary meetings and will be assigning 15% of the students' overall grade.

## **Kellogg Honor Code**

The students of the Kellogg School of Management regard honesty and integrity as qualities essential to the practice and profession of management. The purpose of the Kellogg Honor Code is to promote these qualities so that each student can fully develop his or her individual potential. Upon admission, each student makes an agreement with his or her fellow students to abide by the Kellogg Honor Code. Students who violate the Kellogg Honor Code violate this agreement and must accept the sanction(s) imposed by the Kellogg community.

The Kellogg Honor Code is administered by students and is based on the concept of self-government. The efficacy of such a student-administered honor code is dependent upon a high degree of dedication to the ideals of honesty, integrity and equal opportunity reflected by the code. The Kellogg Honor Code requires that each student act with integrity in all Kellogg activities and that each student hold his or her peers to the same standard. In agreeing to abide by the code, the Kellogg students also agree to report suspected violations. By not tolerating lapses in honesty and integrity, the Kellogg community affirms the importance of these values.

## **Accommodations**

Kellogg Academic Advisors and the Student Life Office work with students with disabilities to ensure that they receive the resources and assistance that they need. These offices contact the faculty member for each class in which a student is enrolled to make sure that the student receives the required accommodations. Please contact your Academic Advisor or the Student Life Office with any questions and to discuss how accommodations can best be implemented throughout the course.

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## Course Materials

There will be two 125-150 pp reading packets (one for each weekend). These must be read <u>before</u> the weekend session to which they pertain.	
<b>HIGHLY RECOMMENDED:</b>	
Africa's Great Civilizations	
PBS Documentary Series by Henry Louis Gates, Jr. Free on Amazon Prime	

## Course Schedule and Assignments

<b>Webinar</b>	<b>November 21 (5-6:00pm central)</b>
<i>Topics:</i>	Class expectations & travel logistics

**Optional session on energy concepts, technology and economics.**

**January 18 9:30-11:30**

<b>Class #1</b>	<b>January 18 (1-6pm central) – Global Hub</b>
<i>Topics:</i>	<p>Class focus: The Problem</p> <p><u>Module 1: 1-2:30</u></p> <p>Ice-breaker: introductions of classmates by team members</p> <p>Arlene Johnson: trip logistics, class roles, etc.</p> <p>Overview lecture</p> <p>Module 2: 2:45-4:15</p>

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	<p>Panel Discussion: The Energy Access Challenge</p> <p>Module 3: 4:30-6:00</p> <p>Discussion/group teamwork</p>
<i>Speakers:</i>	<p>Joyashree Roy, Professor Asian Institute of Technology</p> <p>Morgan Bazilian, Colorado School of Mines</p> <p>Rachel Pritzger, Pritzger Innovation Fund</p> <p>Ted Nordhaus, The Breakthrough Institute</p>
<i>Assignment:</i>	<p>Reading Packet 1</p> <p>IPG Team Exercise</p>

## Evening: Class Dinner (location TBA)

<b>Class #2</b>	<b>January 19 (9am-12pm central) – Global Hub</b>
<i>Topics:</i>	<p>Class Focus: What's been Tried?</p> <p>Module 1: 9:00-10:30</p> <p>Ghana: From Akosombo to PDS</p> <p>Module 2: 1045-12:00</p> <p>Morocco: From darkness to universal access</p>
<i>Speakers:</i>	<p>Seth Mahu: Ghana Energy Ministry</p> <p>Representative of MASEN, Rabat, Morocco</p>
<i>Assignment:</i>	

<b>Group Check-Ins</b>	
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<i>Topics:</i>	Various
<i>Assignment:</i>	IPG groups should check-in with team members weekly  2 check-ins with Professor and Advisor are required before the trip. These can be via teleconference or Skype

<b>Class #3</b>	<b>February 15 (1-6pm central) – Global Hub</b>
<i>Topics:</i>	<p>Class Focus: Brainstorming Solutions</p> <p>Module 1: 1:00-2:30</p> <p>Nuclear for Africa Microgrids for Africa</p> <p>Module 2: 2:45-4:15</p> <p>Financial Models</p> <p>International Development Organization Project Finance</p> <p>Module 3: 4:30-6:00</p> <p>Brainstorming by IPG team</p>
<i>Speakers:</i>	<p>Priscilla Atansah, International Finance Corporation, World Bank</p> <p>Jessica Lovering, Energy for Growth Hub, Carnegie Mellon University</p> <p>Kirsty Gogan, Energy for Humanity</p> <p>Jeff Brown, Stanford University</p> <p>Precious Akanonu, Center for Study of Economics, Abuja Nigeria</p> <p>Microgrid developer</p>

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<i>Assignment:</i>	Reading Packet 2 IPG Team Exercise
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<b>Class #4</b>	<b>February 16 (9am-12pm central) – Global Hub</b>
<i>Topics:</i>	Class Focus: Brainstorming
<i>Speakers:</i>	
<i>Assignment:</i>	

<b>Group Check-Ins</b>	
<i>Topics:</i>	Various
<i>Assignment:</i>	IPG groups should check-in with team members weekly  2 check-ins with Professor and Advisor are required before the trip. These can be via teleconference or Skype

## In-Country Field Research - March 18<sup>th</sup>– March 26<sup>th</sup>

<b>Final Class</b>	<b>April 5 (1-4pm central)</b>
<i>Topics:</i>	
<i>Assignments:</i>	



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## In-Country Academics

Students are reminded that GIM is first and foremost an academic program. 15% of your overall grade will be based on your participation in the plenary meetings and engagement in other activities as assessed by the in-country advisor. In order to achieve a high grade, students are expected to not only attend all plenary meetings, but to be actively engaged during the meetings and other learning opportunities in country.

## GIM Research Project

The core of the GIM class is an independent research project. Groups of 4 to 6 students will select an international business, economic or management issue on which to study in depth and present. The students begin secondary research at the start of the course, incorporating perspectives from the class readings and speakers. They will also spend considerable time in-country speaking with resident experts, gathering local data, and testing their hypotheses and recommendations in the field. In general, the project should be based on original research that contributes to an intellectual body of work but also strives to have practical applications for the market.

*(Students must schedule **five to seven** IPG meetings throughout their trip with **at least** one meeting in every city that class visits on a business day. Students are not obligated to schedule meetings in cities that the class visits only for the weekend.)*

### Research Topics

Before the term begins, the faculty will send out a google sheet with a list of broad topics or industries wherein students can then rank their preferences. The faculty will then assign students to groups based on topic interest which the students will then refine throughout the term with the help and advice of their faculty member. Good GIM projects are generally built around interesting, clear, and relatively narrow research topics. Some titles from successful projects from recent years have included “How Uniqlo’s Brand Positioning and Marketing Strategy Allow the Company to Thrive in China’s Fast Fashion Market” and “Expanding Wine Sales to Middle-Class Brazilians: A Proposal to Concha Y Toro.” Weak GIM projects often have excessively broad or unfocused topics such as “An Overview of the Brazilian Beverage Industry.”

### Project Report Structure

Final reports should be at least fifteen pages in length, excluding exhibits. Groups may choose from the following report formats:

- Traditional analytical research paper – A research question is described; competing answers to the question are discussed; evidence collected on the trip is used to argue for or against the alternative answers.
- Industry analysis – A particular industry is surveyed in order to examine a narrowly

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focused, well-defined topic pertaining to the competitive dynamics of the industry. An example would be an analysis of a market entry opportunity presented to a foreign multinational.

- **Business recommendation report** – A consulting report recommending specific strategic, operational and organizational actions to solving a clearly defined business issue (e.g.: strategies for overcoming cold-chain logistics and distribution challenges in India.).
- **Business or industry case study** – A case for eventual classroom use developed with a clear underlying business question in mind. Teams pursuing this option are encouraged to work with Case Publishing before and after the trip to ensure a high quality product that may eventually be used in the classroom.

## *Project Deliverables*

- **Research Project Proposal** – Each project group will submit a 2-page description of their proposed research topic, including:
  - A description of the specific and narrowly-focused research question(s) to be addressed
  - Description of the topic's importance, timeliness, economic, or social significance
  - Identification of possible in-country visits with companies, governmental agencies, NGOs, etc.
- **Background Research Review** – Each project team will submit a review examining secondary information relevant to its research topic. This review may serve as a first draft of the background section of the final project report.
- **In-Country Plan** – This is a detailed matrix of five or more investigative research meetings arranged in country. The best plans will include day/time/location of meeting; name/description of organization; name/title/bio of interviewee; agenda and interview guide for each meeting.
- **In-Class Presentation** – During the final class, each project group will make a presentation in class summarizing their research findings. The purpose of this deliverable is to allow faculty members and students to learn about and provide feedback on the project groups' final findings. It is suggested that each team be given 15 minutes to present and 5 minutes for audience questions and suggestions.

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- **Written Report** – The final report, generally 10-15 pages long before exhibits and appendices, prepared according to one of the formats discussed above.
- **Peer Evaluation** – Each member within the project group will assess every other member's contributions to the project, including their own, with a confidential peer review form that takes into account each member's intellectual contribution, initiative and organization, workload contribution and overall contribution.
- **IPG Database Google Sheet** – Maintained by the Global Programs' Office, the IPG Database Google Sheet serves as a repository for IPG contact information shared amongst multiple years of GIM students. About a week before final reports are due, the GPO will be sending out a link to the sheet for each IPG group to fill out with information about their contacts. Please note that the requirement for filling out the google sheet is due at the same time as the written report.