

The MS in Sustainability Management program offers a variety of courses within five areas of study:

- 1: Integrative Courses on Sustainability Management
- 2: Economics and Quantitative Analysis (2 courses in Economics/ 1 course in Quantitative Analysis)
- 3: The Physical Dimensions of Sustainability Management
- 4: The Public Policy Environment of Sustainability Management
- 5: General and Financial Management

Overview of all courses offered by the Sustainability Management program, by study area:

Area	Course Name	Pts	Professor	Time
1: Integrative Sustainability Management	SUMA PS4100 Sustainability Management	3	Steve Cohen (Section 1) George Sarrinikolaou (Section 2)	Tuesday, 6:10-8:00 p.m. (Section 1) IN PERSON Monday, 6:10-8:00 p.m. (Section 2) IN PERSON
1: Integrative Sustainability Management	SUMA PS5200 Integrative Capstone Workshop <u>You will be assigned to a workshop group during the first week of class. The section you register for only matters in terms of the time of day it meets (2:10-4 p.m. or 6:10-8:00 p.m.) In order to register for the capstone workshop, you need to be in your final semester or have completed at least 1 course in each of the curriculum areas.</u>	3	Thomas Abdallah, Kizzy Charles-Guzman, Susanne DesRoches, Bob Cook, Natalie Unwin-Kuroneri	Tuesday, 6:10-8:00 p.m. (Sections 1-4) ONE GROUP WILL BE IN PERSON, THE REST WILL BE ONLINE Tuesday, 2:10-4:00 p.m. (Section 5; Natalie Unwin-Kuroneri) IN PERSON
1: Integrative Sustainability Management/ 5: General and Financial Management	SUMA PS5700 Ethics for Sustainability Management and Finance	3	Adela Gondek	Thursday, 6:10-8:00 p.m. HYBRID – some classes will be in person and some online
1: Integrative Sustainability Management/ 3: Physical Dimensions	SUMA PS4734 Earth Institute Practicum	3	Jeffrey Schlegelmilch	Wednesday, 4:10-6:00 p.m. ONLINE
1: Integrative Sustainability Management/ 2: Economics	SUMA PS5150 Energy and Sustainable Development	3	Phillip LaRocco	Wednesday, 6:10-8:00 p.m. ONLINE

1: Integrative Sustainability/ 3: Physical Dimensions/ 4: Public Policy	SUMA PS4130 Sustainable Cities	3	Jitendra Bajpai	Thursday, 4:10-6:00 pm. ONLINE
1: Integrative Sustainability Management/ 5: General and Financial Management	SUMA PS5170 Sustainable Operations	3	Vance Merolla	Thursday, 6:10-8:00 p.m. HYBRID – some classes will be in person and some online
1: Integrative Sustainability Management/ 5: General and Financial Management	SUMA PS5025 Corporate Sustainability Reporting & Strategy	3	Celine Ruben-Salama	Tuesday, 6:10-8:00 p.m. ONLINE
2: Quantitative Analysis/2: Economics	SUMA PS5020 Cost Benefit Analysis (Online)	3	Satyajit Bose	Friday, 6:10-8:00 p.m. ONLINE
2: Quantitative Analysis/ 3: Physical Dimensions	SUMA PS5035 GHG Emissions: Measuring and Minimizing the Carbon Footprint	3	Jon Dickinson	Wednesdays, 6:10-8:00 p.m. ONLINE
2: Quantitative Analysis/ 3: Physical Dimensions	SUMA PS5255 Data Analysis & Visualization in Sustainability	3	Carolynne Hutquist	Tuesdays, 6:10-8:00 p.m. IN PERSON
2: Quantitative Analysis/3: Physical Dimensions	SUMA PS5205 Geographic Information Systems (GIS) for Sustainability Management	3	Dara Mendeloff	Wednesday, 6:10-8:00 p.m. ONLINE
2: Quantitative Analysis/3: Physical Dimensions	SUMA PS5021 Theory and Practice of Life Cycle Assessment	3	Christoph Meinrenken	Wednesday, 6:10-8:00 p.m. IN PERSON
2: Economics	SUMA PS4190 Economics for Sustainability Management	3	Graciela Chichilnisky	Monday, 6:10-8:00 p.m. ONLINE
2: Economics/ 5: General and Financial Management	SUMA PS5195 Accounting, Finance, and Modeling of Sustainable Investments *Formerly titled “Green Accounting”	3	Brad Schwartz	Wednesday, 6:10-8:00 p.m. IN PERSON
2: Economics/ 5: General and Financial Management	SUMA PS5650 Solar Project Development	3	Dan Giuffrida	Thursday, 6:10-8:00 pm. ONLINE

3: Physical Dimensions	SUMA PS5146 Water Systems Analysis	3	Haralambos Vasiliadis	Tuesday, 6:10-8:00 p.m. IN PERSON
3: Physical Dimensions	SUMA PS5162 Responsiveness and Resilience in the Built Environment	3	Lynnette Widder	Monday, 6:10-8:00 p.m. IN PERSON
3: Physical Dimensions	SUMA PS5230 Earth's Climate System	3	Ben Cook	Tuesday, 4:10-6:00 p.m. ONLINE
3: Physical Dimensions	SUMA PS4145 The Science of Sustainable Water	3	Wade McGillis	Monday, 4:10-6:00 p.m. IN PERSON
3: Physical Dimensions	SUMA PS5050 Critical Infrastructure for Sustainable Development	3	Peter Marcotullio	Monday, 6:10-8:00 p.m. HYBRID – classes will be in person depending on student preference
4: Public Policy	SUMA PS5720 Policy and Legal Context for Sustainability Managers	3	Rick Horsch	Monday, 6:10-8:00 p.m. IN PERSON
4: Public Policy	SUMA PS5701 Water Governance	3	Michael Puma	Thursday, 6:10-8:00 p.m. IN PERSON
5: General and Financial Management	SUMA PS5060 Sustainable Fashion & Startup Strategy	3	Ammar Belal	Tuesday, 6:10-8:00 p.m. ONLINE
5: General and Financial Management	SUMA PS5142 Sustainable Finance (Online)	3	Bruce Kahn	Thursday, 8:10-10:00 p.m. ONLINE
5: General and Financial Management	SUMA PS5470 Circular Economy for Sustainability Professionals (<i>This course is not approved for the Area 2: Economics Requirement</i>)	3	Danielle Azoulay	Monday, 6:10-8:00 p.m. IN PERSON
5: General and Financial Management	SUMA PS5197 Financing the Clean Energy Economy (Online)	3	Scott Fisher	Thursday, 6:10-8:00 p.m. ONLINE

Details for courses offered by the Sustainability Management program and other departments, by study area:

1: Integrative Courses on Sustainability Management (9 pts.)

1 Required Introductory Course

1 Capstone Course

1 Approved Integrative Elective Course

Courses That Fulfill the Field Requirement for Integrative Courses on Sustainability Management:

Offered by the Sustainability Management Program:

SUMA PS4100 Sustainability Management

Offered by MS in Sustainability Management Program

Area 1: Integrative Sustainability Management

Call Number: 12248 (section 1), 12249 (section 2)

Points: 3

Instructor: Steve Cohen (section 1), George Sarrinikolaou (section 2)

Day/Time: Tuesdays, 6:10pm-8:00pm (section 1); Mondays, 6:10pm-8:00pm (section 2)

Course Description: The introductory course will provide an overview of sustainability concepts and practices and how they are applied in real-world contexts. This course will begin by clearly defining what sustainability management is and determining if a sustainable economy is actually feasible. Students will learn to connect environmental protection to organizational management by exploring the technical, financial, managerial, and political challenges of effectively managing a sustainable environment and economy. This course is taught in a case-based format and will seek to help students learn the basics of management, environmental policy and sustainability economics. The literature and case material focus on lessons learned in government, non-profits and the private sector. The course will emphasize management in public and nonprofit organizations and the role of public policy in sustainability, but it will also explore how these two sectors interact with private interests to promote sustainable practices.

SUMA PS5200 Integrative Capstone Workshop in Sustainability Management

Offered by MS in Sustainability Management Program

Area 1: Integrative Sustainability Management

Call Numbers: 12263 (Section 001), 12264 (Section 002), 12265 (Section 003), 12266 (Section 004), 12267 (Section 005)

Points: 3

Instructors: Kizzy Charles-Guzman, Thomas Abdallah, Susanne DesRoches, Bob Cook, Natalie Unwin-Kuruner

Day/Time: Sections 1-4, Tuesday, 6:10pm-8:00pm; Section 5, Tuesday, 2:10pm-4:00pm

NOTE: The evening capstone workshop section for which you register now does not determine your final project or faculty advisor assignment. Evening capstone workshop sections will meet together during the first class session; students will hear presentations about each workshop topic from the faculty advisor and then each student will submit a workshop preference form. You will receive your workshop assignment via email with next steps on registering for your assigned section. Students registered for the daytime Capstone Workshop (Section 004 meeting from 2:10-4:00 p.m.) will be assigned to the Section 004 project. **You must have completed 1 course in each of the curriculum areas or be in your final semester in order to enroll in the capstone workshop. Capstone project topics will be announced in mid-August.**

Course Description: The capstone course is a client-based workshop that will integrate each element of the curriculum into an applied project, giving students hands-on sustainability management experience. Workshop projects are necessary and appropriate elements of a balanced professional degree program. In this course students will learn how others manage programs and conduct analysis; they will apply what they have learned in the introductory course and other curricular areas to projects with real-world

clients. Students will serve on teams and undertake a special analytic project and serve as consultants for public and nonprofit agencies, and therefore increase their understanding of the real-world constraints under which sustainability managers operate. The workshop also serves the purpose of sharpening the students analytical and communication skills, by allowing them to apply their previous experience and knowledge gained from the program to real-world problems. The required outputs for the workshop are a project control plan (PCP), a midterm briefing to the class, a final briefing to the class and the client, and a final report. The specific form of the report generated by each project is negotiated between the agency, the faculty advisor and the members of each consulting team.

SUMA PS4734 Earth Institute Practicum

Offered by MS in Sustainability Management Program

Area 1: Integrative Sustainability Management/ Area 3: Physical Dimensions

Call Number: 12253

Points: 3 (Sustainability Management students should select 3 credits when registering)

Instructor Jeffrey Schlegelmilch

Day/Time: Wednesday, 4:10pm-6:00pm

Course Description: Within the Earth Institute, many centers use their expertise to approach the multifaceted problems currently facing the planet. Students taking this course will have the opportunity to attend lectures and presentations given by prominent researchers from the following centers from across the Earth Institute: Center for Climate Change Systems Research; Roundtable on Sustainable Mobility; Center for Sustainable Urban Development; Water Center; Center for International Earth Science Information Network; Millennium Villages Project/Tropical Agriculture and Rural Environmental Program; International Center for Cooperation and Conflict Resolution; Center for Global Health and Economic Development.

SUMA PS4130 Sustainable Cities

Offered by MS in Sustainability Management Program

Area 1: Integrative Sustainability Management/ Area 3: Physical Dimensions/ Area 4: Public Policy

Call Number: 12250

Points: 3

Instructor: Jitendra Bajpai

Day/Time: Thursday, 4:10pm-6:00pm

Course Description: For the first time in history over half the world's population lives in urban areas. Today there are over 400 cities of more than million residents compared to 12 in 1900. By 2050 the share of the world urban population is expected to reach 70 percent, and most growth will occur in developing world. As urban population growth continues, urban centers face the problems of aging infrastructure, economic growth, changing climate, congestion, pollution, and demands of inhabitants to enhance their quality of life. Cities consume 75 percent of world's energy and produce almost 80 percent of global GHG emissions. In response many cities are striving to be low carbon city while sustaining healthy economic and social life. But addressing the new urban agenda requires a new model of cooperation across sectors and all tiers of government to redirect the urban economic development into paths that are restorative. The purpose of this course is to prepare its students to understand, analyze, and develop policies and procedures to address the sustainability issues being faced by urban centers of developed and developing world, their decision-makers and inhabitants.

SUMA PS5025 Corporate Sustainability Reporting and Strategy

Offered by the MS in Sustainability Management Program

Area 1: Integrative/ Area 5: General and Financial Management

Call Number: 12256

Points: 3

Instructor: Celine Ruben-Salama

Day/Time: Tuesday, 6:10pm-8:00pm

Course Description: The purpose of this course is to provide an overview of trends and best practices in corporate communications relating to sustainability, with a particular focus on global sustainability reporting frameworks and green marketing communications. It is designed for those who hold/will hold positions in organizations with responsibilities for communicating the sustainability goals, challenges and achievements, as well as accurately and honestly communicating the environmental aspects of an organization's products and services. Increasingly, large corporations are creating c-suite roles or dedicated departments to oversee this function. More typically, multiple functions contribute information such as: Corporate Communications, Marketing, Community Affairs, Public Policy, Environmental Health & Safety, R&D, Facilities, Operations and Legal. Benefits of reporting range from building trust with stakeholders, and uncovering risks and opportunities; to contributing to stronger long-term business strategy, and creating new products and services.

SUMA PS5150 Energy and Sustainable Development

Offered by MS in Sustainability Management Program

Area 1: Integrative Sustainability Management/ Area 2: Economics

Call Number: 12259

Points: 3

Instructor: Philip LaRocco

Day/Time: Wednesday, 6:10pm-8:00pm

Course Description: This course explores the tension and ambiguity that characterizes energy and development issues in the world's most marginal markets; the inadequacies of "business-as-usual" energy planning and implementation in these markets; and, the potential of non-traditional energy businesses, projects and programs to reach beyond "business as usual" approaches. It mixes the topics of cleaner energy production & use, energy efficiency & waste reduction and energy access & energy poverty in a way that points participants to a different framework for analyzing options to combat climate change, reduce waste and reach un-served and under-served populations. Its entry point and theme is "energy through enterprise". It uses individual enterprise examples to examine resources & technologies, business & program models, policies & institutional approaches and the analysis of macro (country), meso (sector) and micro (transactions). Participants learn and use a set of "frameworks" to achieve a more balanced view of activities at all three of the levels. Students work individually on country analysis and propose a relevant enterprise for the assigned country. Students work in groups to compare similarities and differences among the assigned countries and to collaborate on enterprise development ideas and issues.

SUMA PS5170 Sustainable Operations

Offered by MS in Sustainability Management Program

Area 1: Integrative Sustainability Management/ Area 5: General and Financial Management

Call Number: 12260

Points: 3

Instructor: Vance Merolla

Day/Time: Thursday, 6:10pm-8:00pm

Course Description: In this course, students will work to understand and communicate the importance of identifying and incorporating sustainability at each step along the value chain, including product design, procurement, distribution, manufacturing, product use and end-of-life disposition. By considering the organization holistically, students will perform analyses of the value chain, including Life Cycle and Cost/Benefit Analyses, and incorporate effective sustainability strategies into the

organizational culture and day-to-day operations. Students will conduct risk analyses and implement risk reduction measures in an effort to develop, produce, and distribute more sustainable products and services, aligned with overall business goals. In addition to technical sustainability considerations such as climate change, energy, water and waste, students will be able to implement sustainability initiatives within operating organizations through innovative change management, culture change and other organizational strategies. Importantly, students will be challenged to think concretely about making choices and balancing elements of the triple bottom line in an overall business context.

SUMA PS5700 Ethics of Sustainability Management and Finance

Offered by MS in Sustainability Management Program

Area 1: Integrative Sustainability Management/ Area 5: General and Financial Management

Call Number: 12273

Points: 3

Instructor: Adela Gondek

Day/Time: Thursday, 6:10pm-8:00pm

Course Description: Today we see many new sustainability ethics propounded by organizations such as the UN, EU, OECD, and others, including many start-up organizations. What are these ethics, and how can they be applied in the form of ethics initiatives within other non-profit and governmental organizations, in addition to business organizations, with the aim of including stakeholders and combating corruption? In this course, we will examine the new ethics and discover how they can be implemented as ethics initiatives by sustainability managers, whose decisions typically have global, ecosystem, regional, organizational, workplace and personal dimensions. The course is divided into six sections corresponding to the various dimensions of sustainability and addressing the ethics associated with each. The first section addresses eco-justice and environmental justice; the second, ecological integrity and the land ethic; the third, regional equity and social sector (e.g. food, water, energy) justice; the fourth, social responsibility and responsible leadership; the fifth, transparency and inclusivity; and the sixth, the ethics of care and sensitivity coupled with rationality. The course readings include relevant cases in which the outcomes are shaped by ethical considerations or a deficiency of them. The course also addresses a growing movement towards global standardization of sustainability ethics, which increasingly entails the development of metrics serving as indicators of attentiveness or inattentiveness to ethics.

Offered by other departments:

ENVP U6320 Political Context of Environmental Management

Offered by the School of International and Political Affairs

Area 1: Integrative Sustainability Management/ Area 4: Public Policy

Points: 3

Call Number: 15563

Instructor: Sara Tjossem

Day/Time: Tuesday, 11:00am-12:50pm

Course Description: Many of the decisions we make and actions we take have profound environmental effects, yet economic and political considerations often dominate decision-making in a way that fails to take into account the environmental foundation of our livelihoods. A slow, yet steady extension of environmental imperatives into previously 'non' environmental sectors such as agriculture, trade and energy production, provide some movement towards sustainability. This class explores how the political system identifies public issues as problems requiring public action, and creates and implements policy solutions. It assesses what conditions foster change by anticipating likely outcomes and effective points of intervention to achieve policy goals. It emphasizes the politics of environmental policymaking, using

energy, agriculture and forestry as cases of global enterprises with local to global scales of inquiry. We will explore the tension between the market and economic models and politics and political models of policymaking; interests and interest-group politics; the connections among expertise, knowledge, and policymaking; and the particular politics of policy issues that cross jurisdictional boundaries, including federalism and globalization. We will start the semester considering two contrasting theories of policymaking: an economic, market-based approach with application in environmental policy issues and a political approach. The latter constitutes a critique of the economic paradigm and sets up the tension between the concerns for policy efficiency and effectiveness stemming from the economic model, and those of equity, representation, and consensus derived from the political model. Participants will develop a sense of the history of environmental activism, relevant actors in environmental politics and management, their roles, sources of power and influence, the effects of formal political processes and the sources of potential conflicts.

2: Economics and Quantitative Analysis (9 pts)

2 Courses in General and Sustainability Economics

1 Course in Quantitative Analysis

A. Courses That Fulfill the Field Requirement in General and Sustainability Economics:

Offered by the Sustainability Management Program:

SUMA PS5020 Cost-Benefit Analysis (Online)

Offered by MS in Sustainability Management Program

Area 2: Economics/Area 2: Quantitative Analysis

Call Number: 12557

Points: 3

Instructor: Satyajit Bose

Day/Time: Friday, 6:10pm-8:00pm

Course Description: This course is about cost-benefit analysis and the economic evaluations of policies and projects. Cost benefit analysis (CBA) consists of a comprehensive set of techniques used to evaluate government programs. It is now routinely applied in such program areas as transportation, water projects, health, training and education, criminal justice, environmental protection, urban policy and even in the international arena such as foreign direct investment. Many of the techniques of CBA can also be applied to private sector decision-making. The objective of CBA is to determine whether the benefits of a particular program, policy or decision outweigh its costs. The techniques used to determine this are sometimes quite simple, but on other, increasingly frequent occasions are highly sophisticated. Sophisticated cost benefit studies are based on a framework that utilizes the basic concepts of economic theory. In addition, statistical and econometric analyses are often needed to estimate program effects from diverse available data. The course has two parts: methodology and practice. The goal is for students to be practically adept to undertake an independent cost-benefit analysis.

SUMA PS5150 Energy and Sustainable Development

Offered by MS in Sustainability Management Program

Area 1: Integrative Sustainability Management/ Area 2: Economics

Call Number: 12259

Points: 3

Instructor: Philip LaRocco

Day/Time: Wednesday, 6:10pm-8:00pm

Course Description: This course explores the tension and ambiguity that characterizes energy and development issues in the world's most marginal markets; the inadequacies of "business-as-usual" energy planning and implementation in these markets; and, the potential of non-traditional energy businesses, projects and programs to reach beyond "business as usual" approaches. It mixes the topics of cleaner energy production & use, energy efficiency & waste reduction and energy access & energy poverty in a way that points participants to a different framework for analyzing options to combat climate change, reduce waste and reach un-served and under-served populations. Its entry point and theme is "energy through enterprise". It uses individual enterprise examples to examine resources & technologies, business & program models, policies & institutional approaches and the analysis of macro (country), meso (sector) and micro (transactions). Participants learn and use a set of "frameworks" to achieve a more balanced view of activities at all three of the levels. Students work individually on country analysis and propose a relevant enterprise for the assigned country. Students work in groups to compare similarities and differences among the assigned countries and to collaborate on enterprise development ideas and issues.

SUMA PS4190 Economics for Sustainability Management

Offered by MS in Sustainability Management Program

Area 2: Economics

Call Number: 12252

Points: 3

Instructor: Graciela Chichilnisky

Day/Time: Monday, 6:10pm-8:00pm

Course Description: This course builds on core economics courses and addresses issues of environmental, resource and sustainable economics. It focuses on the interaction between markets and the environment; policy issues related to optimal extraction and pricing; property rights in industrial and developing countries and how they affect international trade in goods such as timber, wood pulp, and oil. An important goal of the class is to have students work in groups to apply economic concepts to current public policy issues having to do with urban environmental and earth systems. The use of the world's water bodies and the atmosphere as economic inputs to production are also examined. The economics of renewable resources is described and sustainable economic development models are discussed and analyzed. Some time will also be devoted to international trade and regulation, and industrial organization issues. Students not only learn economic concepts, but they will also learn how to explain them to decision-makers.

SUMA PS5195 Accounting, Finance, and Modeling of Sustainable Investments*

Offered by MS in Sustainability Management Program

Area 2: Economics/ Area 5: General and Financial Management

Call Number: 12261

Points: 3

Instructor: Brad Schwartz

Day/Time: Wednesday, 6:10pm-8:00pm

***Note:** The course was formerly title "Green Accounting." If you previously took the "Green Accounting" course, you are not eligible to take this course.

Course Description: This course examines traditional and emerging financial and cost accounting practices, non-financial sustainability performance metrics, their interdependencies and influence on corporate management, corporate reporting, and other systems. Students begin learning how financial performance is presented within traditional financial reports and analyzed using benchmarks, ratios and through interconnections with real world trends. They obtain critical insights and an appreciation of how financial and non-financial accounting data and sustainability performance metrics influence

shareholder and corporate management investment decisions, strategic priorities, budget allocations and capital investments.

SUMA PS5650 Solar Project Development

Offered by the MS in Sustainability Management Program

Area 2: Economics/ Area 5: General and Financial Management

Points: 3

Call Number: 12272

Instructor: Dan Giuffrida

Day/Time: Thursday, 6:10pm-8:00pm

Course Description: At the end of this course, students will be prepared to fully evaluate the technical and financial aspects of a solar project. They will be equipped with skills allowing them to either develop or rigorously vet solar project proposals. The course introduces and provides students with a holistic understanding of the end-to-end solar development process. The course has two goals: A) To provide students a deep understanding of the dozens of critical interrelated steps critical to developing a successful operating solar project. B) To equip the students with the tools and understanding of the skills necessary to develop a solar project beginning with site selection encompassing the entire process to commissioning and operations. We begin the course providing the students with an understanding of the different segments of the solar industry; covering the upstream business, the main players both upstream and downstream and then outlining the different downstream markets: utility, commercial, and residential. We will then hone in on the distributed generation segment of the market; commercial, and residential. To begin, we will cover the critical value drivers of solar: sunlight resource, grid energy cost, tax credits, state and utility incentives including renewable energy credit markets. Energy consumption and production, despite what critics will say about renewables, is the main value driver of the move to renewables. In that light, we will cover in detail, net metering, national and local electricity markets, and electric utility tariff structure to understand how value is generated and measured. We will conduct energy consumption analysis for different end-users to see how solar can and will be deployed and valued across different geographic and utility tariff classes.

Offered by other departments:

ECON GU4251 Industrial Organization

Offered through Economics, Graduate School of Arts and Sciences

Area 2: Economics

Points: 3

Call Number: 12227

Instructor: TBD

Dates and Times: Monday and Wednesday, 4:10pm-5:25pm

Course Description: Prerequisites: ECON UN3211 and ECON UN3213 The study of industrial behavior based on game-theoretic oligopoly models. Topics include pricing models, strategic aspects of business practice, vertical integration, and technological innovation.

ECON GU4370 Political Economy

Offered through Economics, Graduate School of Arts and Sciences

Area 2: Economics

Points: 3

Call Number: 10566

Instructor: Alessandra Casella

Dates and Times: Monday and Wednesday, 10:10am-11:25am

Course Description: Prerequisites: ECON UN3211 and ECON UN3213 and STAT UN1201 or POLS 4710 for those who declared prior to Spring 2014. The course studies the interaction between government and markets. The first part discusses market failures and the scope and limits of government intervention, including the use of modified market-type tools (for example, cap-and-trade regulations for pollution). The second part discusses collective decision-making, in particular voting and its properties and pathologies. The final part discusses economic inequality and government's role in addressing it.

B. Courses That Fulfill the Field Requirement in Statistics/Quantitative Analysis

Offered by the Sustainability Management Program:

SUMA PS5020 Cost-Benefit Analysis (Online)

Offered by MS in Sustainability Management Program

Area 2: Economics/Area 2: Quantitative Analysis

Call Number: 12557

Points: 3

Instructor: Satyajit Bose

Day/Time: Friday, 6:10pm-8:00pm

Course Description: This course is about cost-benefit analysis and the economic evaluations of policies and projects. Cost benefit analysis (CBA) consists of a comprehensive set of techniques used to evaluate government programs. It is now routinely applied in such program areas as transportation, water projects, health, training and education, criminal justice, environmental protection, urban policy and even in the international arena such as foreign direct investment. Many of the techniques of CBA can also be applied to private sector decision-making. The objective of CBA is to determine whether the benefits of a particular program, policy or decision outweigh its costs. The techniques used to determine this are sometimes quite simple, but on other, increasingly frequent occasions are highly sophisticated. Sophisticated cost benefit studies are based on a framework that utilizes the basic concepts of economic theory. In addition, statistical and econometric analyses are often needed to estimate program effects from diverse available data. The course has two parts: methodology and practice. The goal is for students to be practically adept to undertake an independent cost-benefit analysis.

SUMA PS5035 Greenhouse Gas (GHG) Emissions: Measuring and Minimizing the Carbon Footprint

Offered by the MS in Sustainability Management Program

Area 2: Quantitative Analysis/ Area 3: Physical Dimensions

Call Number: 21613

Points: 3

Instructor: Jonathan Dickinson

Day/Time: Wednesday, 6:10-8:00pm

Course Description: This course provides students with the knowledge and skills to account for and manage greenhouse gas (GHG) emissions, which contribute to global climate change. The course will address the importance of using estimation techniques to create GHG emissions inventories for organizations as well as for economic activities, such as transportation. The course will provide students an understanding of the protocols that govern the practice of carbon accounting, and the standards by which GHG emissions inventories are verified and disclosed to the public. Moreover, the course will help students understand how to use carbon accounting as the basis for developing and prioritizing emissions reduction strategies for the purpose of mitigating climate change risks.

SUMA PS5255 Data Analysis & Visualization in Sustainability

Offered by MS in Sustainability Management Program

Area 2: Quantitative Analysis/ Area 3: Physical Dimensions

Call Number: 12270

Points: 3

Instructor: Carolynne Hultquist

Day/Time: Tuesday, 6:10pm-8:00pm

Course Description: Data science is an exciting new field of applied research that takes advantage of the ever-growing volume of data being collected to support of decision-making in both the public and private sectors. Similar to traditional statistical analysis, these new approaches have limits and issues that are important to understand before application to problem solving. This course aims to introduce the common methods used in data science, best practices in data management, and the basic scripting skills required to start analyzing data in R and Python. After introducing foundational scripting and data analysis methods, a case study approach will be used to highlight both what can be accomplished with data analysis and the limits of the data and methods used. Lab exercises will teach basic skills in scripting in Python and R and then move to a common approach for data analysis: adapting existing scripts and software libraries to solve applied data problems. The requirement to understand the interaction of social and natural systems requires data-driven policy decisions, and the ongoing assessment of policies requires rigorous, reproducible assessments of effectiveness for promoting sustainability. Both requirements can be met in part by data science approaches that are applicable to the natural and social sciences and reproducible in academic and applied settings. Data science techniques have been developed to derive insight from large volumes of available data that are often collected for purposes other than the interests of the data scientist. This flexibility in approach means that the techniques used in data science are well adapted to support gaining insights from data relevant for sustainability science. This course has been designed to introduce these techniques in anticipation of increased use in promoting sustainability. The course has no prerequisites; however, an understanding of statistics and probability will be very useful background, and any previous programming or scripting skills will be applicable to the lab assignments.

SUMA PS5205 Geographic Information Systems (GIS) for Sustainability Management

Offered by MS in Sustainability Management Program

Area 2: Quantitative Analysis/Area 3: Physical Dimensions

Call Number: 12268

Points: 3

Instructor: Dara Mendeloff

Day/Time: Wednesday, 6:10pm-8:00pm

Course Description: Geographic Information Systems (GIS) are a system of computer software, data and analysis methods used to create, store, manage, digital information that allow us to create maps and dynamic models to analyze the physical and social processes of the world. This course is designed to provide students with a comprehensive overview of theoretical concepts underlying GIS systems and to give students a strong set of practical skills to use GIS for sustainable development research. Through a mixture of lectures, readings, focused discussions, and hands-on exercises, students will acquire an understanding of the variety and structure of spatial data and databases, gain knowledge of the principles behind raster and vector based spatial analysis, and learn basic cartographic principles for producing maps that effectively communicate a message. Students will also learn to use newly emerging web based mapping tools such as Google Earth, Google Maps and similar tools to develop online interactive maps and graphics. The use of other geospatial technologies such as Remote Sensing and the Global Positioning System will also be explored in this class. Case studies examined in class will draw examples from a wide range of GIS applications developed to assist in the design, implementation and evaluation of sustainable development projects and programs.

SUMA PS5021 Theory and Practice of Life Cycle Assessment

Offered by the MS in Sustainability Management Program

Area 2: Quantitative Analysis/ Area 3: Physical Dimensions

Points: 3

Call Number: 12255

Instructor: Christoph Meinrenken

Day/Time: Wednesdays, 6:10pm-8:00pm

Course Description: Life Cycle Assessment (LCA), a methodology to assess the environmental impact of products, services, and industrial processes is an increasingly important tool in corporate sustainability management. This course teaches both the theoretical framework as well as step-by-step practical guidelines of conducting LCAs in companies and organizations. Particular emphasis is placed on separating the more academic, but less practically relevant aspects of LCA (which will receive less focus) from the actual practical challenges of LCA (which will be covered in detail, including case studies). The course also covers the application of LCA metrics in a companies' management and discusses the methodological weaknesses that make such application difficult, including how these can be overcome. Product carbon footprinting (as one form of LCA) receives particular focus, owing to its widespread practical use in recent and future sustainability management.

Offered by other departments:

EAAE E4001 Industrial Ecology of Earth Resources

Offered through Earth and Environmental Engineering, The Fu Foundation School of Engineering and Applied Science

Area 2: Quantitative Analysis/ Area 3: Physical Dimensions

Points: 3

Call Number: 13593

Instructor: Athanasios Bourtsalas

Day/Time: Tuesday, 4:10pm-6:00pm

Course Description: Industrial ecology examines how to reconfigure industrial activities so as to minimize the adverse environmental and material resource effects on the planet. Engineering applications of methodology of industrial ecology in the analysis of current processes and products and the selection or design of environmentally superior alternatives. Home assignments of illustrative quantitative problems.

STAT GU4204 Statistical Inference

Offered by the Graduate School of Arts and Sciences

Area 2: Quantitative Analysis

Call Number: 12477 (Section 3)

Points: 3

Instructor: Irene Hueter

Day/Time: Monday and Wednesday, 6:10pm-7:25pm

Course Description: Prerequisites: STAT GU4203. At least one semester of calculus is required; two or three semesters are strongly recommended. Calculus-based introduction to the theory of statistics. Useful distributions, law of large numbers and central limit theorem, point estimation, hypothesis testing, confidence intervals maximum likelihood, likelihood ratio tests, nonparametric procedures, theory of least squares and analysis of variance.

STAT GU4261 Statistical Methods in Finance

Offered by the Graduate School of Arts and Sciences

Area 2: Quantitative Analysis

Call Number: 12494

Points: 3

Instructor: Hammou El Barmi

Day/Time: Friday, 10:10am-12:55pm

Course description: Prerequisites: STAT GU4205 or the equivalent. A fast-paced introduction to statistical methods used in quantitative finance. Financial applications and statistical methodologies are intertwined in all lectures. Topics include regression analysis and applications to the Capital Asset Pricing Model and multifactor pricing models, principal components and multivariate analysis, smoothing techniques and estimation of yield curves statistical methods for financial time series, value at risk, term structure models and fixed income research, and estimation and modeling of volatilities. Hands-on experience with financial data.

3: The Physical Dimensions of Sustainability Management (9 pts.)

0, 1 or 2 Courses in Earth and Environmental Engineering

0, 1 or 2 Courses in Environmental Planning, Design, or Architecture

0, 1 or 2 Courses in Ecology or Earth and Environmental Sciences

A. Courses That Fulfill the Field Requirement in Earth and Environmental Engineering

Offered by the Sustainability Management program:

SUMA PS5035 Greenhouse Gas (GHG) Emissions: Measuring and Minimizing the Carbon Footprint

Offered by the MS in Sustainability Management Program

Area 2: Quantitative Analysis/ Area 3: Physical Dimensions

Call Number: 21613

Points: 3

Instructor: Jonathan Dickinson

Day/Time: Wednesday, 6:10-8:00pm

Course Description: This course provides students with the knowledge and skills to account for and manage greenhouse gas (GHG) emissions, which contribute to global climate change. The course will address the importance of using estimation techniques to create GHG emissions inventories for organizations as well as for economic activities, such as transportation. The course will provide students an understanding of the protocols that govern the practice of carbon accounting, and the standards by which GHG emissions inventories are verified and disclosed to the public. Moreover, the course will help students understand how to use carbon accounting as the basis for developing and prioritizing emissions reduction strategies for the purpose of mitigating climate change risks.

SUMA PS5255 Data Analysis & Visualization in Sustainability

Offered by MS in Sustainability Management Program

Area 2: Quantitative Analysis/ Area 3: Physical Dimensions

Call Number: 12270

Points: 3

Instructor: Carolynne Hultquist

Day/Time: Tuesday, 6:10pm-8:00pm

Course Description: Data science is an exciting new field of applied research that takes advantage of the ever-growing volume of data being collected to support of decision-making in both the public and private sectors. Similar to traditional statistical analysis, these new approaches have limits and issues

that are important to understand before application to problem solving. This course aims to introduce the common methods used in data science, best practices in data management, and the basic scripting skills required to start analyzing data in R and Python. After introducing foundational scripting and data analysis methods, a case study approach will be used to highlight both what can be accomplished with data analysis and the limits of the data and methods used. Lab exercises will teach basic skills in scripting in Python and R and then move to a common approach for data analysis: adapting existing scripts and software libraries to solve applied data problems. The requirement to understand the interaction of social and natural systems requires data-driven policy decisions, and the ongoing assessment of policies requires rigorous, reproducible assessments of effectiveness for promoting sustainability. Both requirements can be met in part by data science approaches that are applicable to the natural and social sciences and reproducible in academic and applied settings. Data science techniques have been developed to derive insight from large volumes of available data that are often collected for purposes other than the interests of the data scientist. This flexibility in approach means that the techniques used in data science are well adapted to support gaining insights from data relevant for sustainability science. This course has been designed to introduce these techniques in anticipation of increased use in promoting sustainability. The course has no prerequisites; however, an understanding of statistics and probability will be very useful background, and any previous programming or scripting skills will be applicable to the lab assignments.

SUMA PS5205 Geographic Information Systems (GIS) for Sustainability Management

Offered by MS in Sustainability Management Program

Area 2: Quantitative Analysis/Area 3: Physical Dimensions

Call Number: 12268

Points: 3

Instructor: Dara Mendeloff

Day/Time: Wednesday, 6:10pm-8:00pm

Course Description: Geographic Information Systems (GIS) are a system of computer software, data and analysis methods used to create, store, manage, digital information that allow us to create maps and dynamic models to analyze the physical and social processes of the world. This course is designed to provide students with a comprehensive overview of theoretical concepts underlying GIS systems and to give students a strong set of practical skills to use GIS for sustainable development research. Through a mixture of lectures, readings, focused discussions, and hands-on exercises, students will acquire an understanding of the variety and structure of spatial data and databases, gain knowledge of the principles behind raster and vector based spatial analysis, and learn basic cartographic principles for producing maps that effectively communicate a message. Students will also learn to use newly emerging web based mapping tools such as Google Earth, Google Maps and similar tools to develop online interactive maps and graphics. The use of other geospatial technologies such as Remote Sensing and the Global Positioning System will also be explored in this class. Case studies examined in class will draw examples from a wide range of GIS applications developed to assist in the design, implementation and evaluation of sustainable development projects and programs.

SUMA PS5021 Theory and Practice of Life Cycle Assessment

Area 2: Quantitative Analysis/ Area 3: Physical Dimensions

Points: 3

Call Number: 12255

Instructor: Christoph Meinrenken

Day/Time: Wednesdays, 6:10pm-8:00pm

Course Description: Life Cycle Assessment (LCA), a methodology to assess the environmental impact of products, services, and industrial processes is an increasingly important tool in corporate sustainability

management. This course teaches both the theoretical framework as well as step-by-step practical guidelines of conducting LCAs in companies and organizations. Particular emphasis is placed on separating the more academic, but less practically relevant aspects of LCA (which will receive less focus) from the actual practical challenges of LCA (which will be covered in detail, including case studies). The course also covers the application of LCA metrics in a companies' management and discusses the methodological weaknesses that make such application difficult, including how these can be overcome. Product carbon footprinting (as one form of LCA) receives particular focus, owing to its widespread practical use in recent and future sustainability management.

SUMA 5050 Critical Infrastructure for Sustainable Development

Offered by the MS in Sustainability Management Program

Area 3: Physical Dimensions

Call Number: 22840

Points: 3

Instructor: Peter Marcotullio

Day/Time: Monday, 6:10-8:00pm

Course Description: What are urban infrastructures that promote sustainability? Such infrastructure must reduce environmental pollution at all scales, provide necessary urban services efficiently and enhance urban resilience to multiple potential crises. Sustainable infrastructure also must promote social and economic equity and environmental justice. And sustainable infrastructure must be economically feasible. This class will use these concepts to evaluate urban infrastructure and identify challenges to making urban infrastructure sustainable. Importantly, the course will use theories of urban transitions to help identify the drivers of potential change in infrastructure development and envision the emergence of sustainable infrastructure. This class will examine these notions across the energy, transportation, water supply and waste water treatment, buildings, health and open space urban sectors.

Offered by other departments:

EAAE E4001 Industrial Ecology of Earth Resources

Offered through Earth and Environmental Engineering, The Fu Foundation School of Engineering and Applied Science

Area 2: Quantitative Analysis/Area 3: Physical Dimensions

Points: 3

Call Number: 13593

Instructor: Athanasios Bourtsalas

Day/Time: Tuesday, 4:10pm-6:00pm

Course Description: Industrial ecology examines how to reconfigure industrial activities so as to minimize the adverse environmental and material resource effects on the planet. Engineering applications of methodology of industrial ecology in the analysis of current processes and products and the selection or design of environmentally superior alternatives. Home assignments of illustrative quantitative problems.

EAAE E4350 Planning/Management-Urban Hydrologic System

Offered through Earth and Environmental Engineering, The Fu Foundation School of Engineering and Applied Science

Area 3: Physical Dimensions

Call Number: 13592

Points: 3

Instructor: Eric A Rosenberg

Day/Time: Tuesday, 4:10pm-6:40pm

Course Description: Prerequisites: ENME E3161 or the equivalent. Introduction to runoff and drainage systems in an urban setting, including hydrologic and hydraulic analyses, flow and water quality monitoring, common regulatory issues, and mathematical modeling. Applications to problems of climate variation, land use changes, infrastructure operation and receiving water quality, developed using statistical packages, public-domain models, and Geographical Information Systems (GIS). Team projects that can lead to publication quality analyses in relevant fields of interest. Emphasis on the unique technical, regulatory, fiscal, policy, and other interdisciplinary issues that pose a challenge to effective planning and management of urban hydrologic systems.

EAAE E4550 Catalysis of Emissions Control

Offered through Earth and Environmental Engineering, The Fu Foundation School of Engineering and Applied Science

Area 3: Physical Dimensions

Call Number: 12840

Points: 3

Instructor: Robert Farrauto

Day/Time: Monday and Wednesday, 2:40pm-3:55pm

Course Description: Prerequisites, ENME E3161 and MSAE E3111 or the equivalent. Fundamentals of heterogeneous catalysis including modern catalytic preparation techniques. Analysis and design of catalytic emissions control systems. Introduction to current industrial catalytic solutions for controlling gaseous emissions. Introduction to future catalytically enabled control technologies.

B. Courses That Fulfill the Field Requirement in Environmental Planning, Design, or Architecture

Offered by the Sustainability Management program:

SUMA PS4130 Sustainable Cities

Offered by MS in Sustainability Management Program

Area 1: Integrative Sustainability Management/ Area 3: Physical Dimensions/ Area 4: Public Policy

Call Number: 12250

Points: 3

Instructor: Jitendra Bajpai

Day/Time: Thursday, 4:10pm-6:00pm

Course Description: For the first time in history over half the world's population lives in urban areas. Today there are over 400 cities of more than million residents compared to 12 in 1900. By 2050 the share of the world urban population is expected to reach 70 percent, and most growth will occur in developing world. As urban population growth continues, urban centers face the problems of aging infrastructure, economic growth, changing climate, congestion, pollution, and demands of inhabitants to enhance their quality of life. Cities consume 75 percent of world's energy and produce almost 80 percent of global GHG emissions. In response many cities are striving to be low carbon city while sustaining healthy economic and social life. But addressing the new urban agenda requires a new model of cooperation across sectors and all tiers of government to redirect the urban economic development into paths that are restorative. The purpose of this course is to prepare its students to understand, analyze, and develop policies and procedures to address the sustainability issues being faced by urban centers of developed and developing world, their decision-makers and inhabitants.

SUMA PS5162 Responsiveness and Resilience in the Built Environment

Offered by MS in Sustainability Management Program

Area 3: Physical Dimensions

Call Number: 15546

Points: 3

Instructor: Lynnette Widder

Day/Time: Tuesday, 6:10pm-8:00pm

Course Description: What does our built environment tell us about sustainability? About our practices and values? How does it perform within the systems and cycles of the larger anthropogenic environment we inhabit? This course will consider analytical paradigms for understanding the inputs and throughputs of energy, material and labor as a method for quantifying resources. However, it will also offer methods to describe and account for the cultural significance that our environment represents within a forward-looking, critical context. You will be asked to attend weekly lectures and to prepare readings for discussion. In addition, one short group project and one term group project will challenge and train you to think integrally about the interplay of energy, material resources, labor and culture in an urban context – the Brooklyn Navy Yard redevelopment project. These group projects will be reviewed during in-class lab times and ultimately will be presented publicly to a group of guest critics. Lecture and workshop topics include systems paradigms, settlements and aggregations, thermal and electrical energy principles, built environment hydrology and visual communications strategies for sustainability management; case study presentations will bring these concepts to life. Readings include articles and books by Adrian Parr, William McDonough and Michael Braungart, Bill Bryson, Amy Seidl, Mike Davis and John McPhee, among others.

Offered by other departments:

CNAD PS5130 Green Building and Sustainability: Tools and Technology

Offered by the School of Professional Studies

Area 3: Physical Dimensions

Call Number: 14111

Points: 3

Day/Time: Tuesday, 6:10pm-8:00pm

Instructor: Narada Golden

Description: This course is designed to provide a comprehensive overview of key concepts and approaches in green building and sustainability. Specific material will include best practices and trends in design, construction, and business; analysis tools; green building rating systems (with an emphasis on LEED and the Living Building Challenge); the paradigm of sustainable thinking; and applying sustainability in the real (working) world. The course will also provide a preparatory platform for individuals looking to take the LEED Green Associate exam (a precursor to the LEED AP). The course format is designed to support practical understanding, and will include presentations, discussions, guest lecturers, site visits, and a semester long group project to apply the concepts as they are discussed. Students will be provided with resources and tools to facilitate self-directed exploration of the topics, and a forum to develop and communicate findings and considerations.

INAF U6086 Green Buildings: Policies and Strategies for Success

Offered by the School of International and Public Affairs

Area 3: Physical Dimensions

Call Number: 15634

Points: 3

Day/Time: Wednesday, 2:10pm - 4:00pm

Instructor: Robert Watson

Description: The construction and operation of buildings is the most environmentally damaging of all human activities in the United States and possibly the world. Coined in the late 80's, so-called "green buildings" have the potential to largely eliminate negative environmental externalities and, with emerging design practices and technologies, even prove to be a restorative force for nature. As the largest consumer of energy on the planet, climate change will not be solvable without full-scale implementation of green building programs and policies. This 14-week course will offer participants practical tools to understand the benefits of green buildings and the barriers and policy and programmatic prescriptions that can deliver this vital solution at the necessary scale, scope and speed to implement 21c sustainable solutions.

C. Courses That Fulfill the Field Requirement in Ecology or Earth and Environmental Sciences

Offered by the Sustainability Management program:

SUMA PS4734 Earth Institute Practicum

Offered by MS in Sustainability Management Program

Area 1: Integrative Sustainability Management/ Area 3: Physical Dimensions

**Please note this course is now designated for Area 3: Physical Dimensions as a result of changes planned to the course content and syllabus for the fall 2017 semester. This designation is not retroactive if you have previously taken the course.*

Call Number: 12253

Points: 3 (*Sustainability Management students should select 3 credits when registering in SSOL*)

Instructor Jeffrey Schlegelmilch

Day/Time: Wednesday, 4:10pm-6:00pm

Course Description: Within the Earth Institute, many centers use their expertise to approach the multifaceted problems currently facing the planet. Students taking this course will have the opportunity to attend lectures and presentations given by prominent researchers from the following centers from across the Earth Institute: Center for Climate Change Systems Research; Roundtable on Sustainable Mobility; Center for Sustainable Urban Development; Water Center; Center for International Earth Science Information Network; Millennium Villages Project/Tropical Agriculture and Rural Environmental Program; International Center for Cooperation and Conflict Resolution; Center for Global Health and Economic Development.

SUMA PS5146 Water Systems Analysis

Offered by the MS in Sustainability Management Program

Area 3: Physical Dimensions

Call Number: 12258

Points: 3

Instructor: Haralambos Vasiliadis

Day/Time: Tuesday, 6:10pm-8:00pm

Course Description: This class provides a structured introduction to the integrated analysis of physical and institutional systems for water management and development. Multiple scales and settings, from developing country villages to a US city water supply to regional watershed restoration to national planning are considered. The emerging global water crisis driven by rapid population growth and its relation to agricultural water use will be a recurrent theme through the class. Novel topics include the consideration of climate variability and change in developing system operation rules and infrastructure

planning. The course includes modules on integrated water management and water systems analysis including water supply/demand imbalances, the modeling and design of a regulatory system for water allocation and tools for conservation incentives and insurance system design; and a multi-scale view of operation and planning from weekly to seasonal to decadal planning for multiple, competing objective. There will be guest lectures from engineers/scientist/professors working in the water sector. This course provides students with an analytic framework for operating, managing, and planning water systems, considering values and needs.

SUMA PS5230 Earth's Climate System

Offered by the MS in Sustainability Management Program

Area 3: Physical Dimensions

Call Number: 12269

Points: 3

Instructor: Ben Cook

Day/Time: Tuesday, 4:10pm-6:00pm

Course Description: This course examines the fundamental physical processes that control the primary features and patterns of variability of the Earth's climate system. Specific topics include energy balance and the greenhouse effect, the circulation of the oceans and atmosphere, land surface interactions and feedbacks, the role of the biosphere and cryosphere, paleoclimatology, climate modeling, and global and regional patterns of climate variability and change observed and expected as a consequence of anthropogenic influences. The goal of the course is to provide students with the opportunity to gain a fundamental understanding of the processes that give rise to observed climate variability at a range of temporal and spatial scales. Students will develop the quantitative skills and knowledge to allow them to independently evaluate scientific claims about the state and behavior of Earth's climate system in the past, present and future. The course includes case study modules that integrate an understanding of the physical processes and important feedbacks in the context of policy- and management-relevant aspects of current and future climate change.

SUMA PS4145 The Science of Sustainable Water

Offered by the MS in Sustainability Management Program

Area 3: Physical Dimensions

Call Number: 12251

Points: 3

Instructors: Wade McGillis

Day/Time: Monday, 4:10pm-6:00pm

Course Description: The sustainability of water resources is a critical issue facing society over the coming decades. Water resources are affected by changes not only in climate but also in population, economic growth, technological change, and other socioeconomic factors. In addition, they serve a dual purpose; water resources are critical to both human society and natural ecosystems. The objective of this course is to first provide students with a fundamental understanding of key hydrological processes. Students will then use this understanding to explore various sustainable strategies for integrated water resources management. Numerous case studies will be highlighted throughout the course to illustrate real world, practical challenges faced by water managers. Students will be asked to think critically and to use basic quantitative and management skills to answer questions related to sustainable water development. Considering the importance of water to society the understanding that students obtain from this course will be an essential part of their training in sustainable management.

Offered by other departments:

EAAE E4550 Catalysis of Emissions Control

Offered through Earth and Environmental Engineering, The Fu Foundation School of Engineering and Applied Science

Call Number: 12840

Points: 3

Instructor: Robert Farrauto

Day/Time: Monday and Wednesday, 2:40pm-3:55pm

Course Description: Prerequisites: One year of general college chemistry. Fundamentals of heterogeneous catalysis including modern catalytic preparation techniques. Analysis and design of catalytic emissions control systems. Introduction to current industrial catalytic solutions for controlling gaseous emissions. Introduction to future catalytically enabled control technologies.

EESC GU4008 Introduction to Atmospheric Science

Offered through Earth and Environmental Sciences, Graduate School of Arts and Sciences

Call Number: 12447

Points: 3

Instructor: Lorenzo M Polvani

Day/Time: Thursday, 4:10pm-6:40pm

Course Description: Prerequisites: advanced calculus and general physics, or the instructor's permission. Basic physical processes controlling atmospheric structure: thermodynamics; radiation physics and radiative transfer; principles of atmospheric dynamics; cloud processes; applications to Earth's atmospheric general circulation, climatic variations, and the atmospheres of the other planets.

EESC GU4050 Global Assessment and Remote Sensing

Offered through Earth and Environmental Sciences, Graduate School of Arts and Sciences

Call Number: 12448

Points: 3

Instructor: Christopher Small

Day/Time: Thursday, 5:40pm-6:55pm; Lab Required: Friday, 9:00am-11:00am

Course Description: Priority given to graduate students in the natural sciences and engineering. Advanced level undergraduates may be admitted with the instructor's permission. Calculus I and Physics I & II are required for undergraduates who wish to take this course. General introduction to fundamentals of remote sensing; electromagnetic radiation, sensors, interpretation, quantitative image analysis and modeling. Example applications in the Earth and environmental sciences are explored through the analysis of remote sensing imagery in a state-of-the-art visualization laboratory.

EESC GU4925 Introduction to Physical Oceanography

Offered through Earth and Environmental Sciences, Graduate School of Arts and Sciences

Call Number: 12456

Points: 3

Instructor: Andreas Thurnherr

Day/Time: Tuesday and Thursday, 8:40am-9:55am

Course Description: Prerequisites: Recommended preparation: a solid background in mathematics, physics, and chemistry. Physical properties of seawater, water masses and their distribution, sea-air interaction influence on the ocean structure, basic ocean circulation pattern, relation of diffusion and advection with respect to distribution of ocean properties, ocean tides and waves, turbulence, and introduction to ocean dynamics.

4: The Public Policy Environment of Sustainability Management (3 pts.)

1 Course in Environmental or Sustainability Policy or Law

Courses offered by the Sustainability Management Program:

SUMA PS5720 Policy and Legal Context of Sustainability Management

Offered by the MS in Sustainability Management Program

Area 4: Public Policy

Call Number: 12275

Points: 3

Instructors: Rick Horsch

Day/Time: Monday, 6:10pm-8:00pm

Course Description: Public policy shapes how the man-made and natural environments are managed and regulated. Sustainability practitioners must be able to understand public policy and its effects on what they are charged to do. This course will provide students with an understanding of environmental sustainability policy and the resulting law and regulations in order to strengthen their ability to understand, interpret, and react to future developments.

SUMA PS5701 Water Governance

Offered by MS in Sustainability Management Program

Area 4: Public Policy

Call Number: 12274

Points: 3

Instructor: Michael Puma

Day/Time: Thursday, 6:10pm-8:00pm

Course Description: Water is widely recognized as the most essential natural resource for Earth's ecosystems and human society. Yet the relationship between water and society is complex. Water is a multifaceted resource that is important to all economic sectors and across a range of spatial scales from local to global. Water is also frequently a hazard; flooding, droughts, and contaminated water are formidable threats to human well-being. To deal with this seemingly dual nature of water, people have long modified the water cycle through engineering schemes like dams, reservoirs, irrigation systems, and interbasin transfer systems as well as through land use and land-cover change. To even the casual observer, a clear and robust plan is needed to manage and govern water given the multitude of ongoing human activities impacting the water cycle. This course will provide an overview of the political, social, economic, and administrative systems that affect the use, development, and management of water resources. Students will be introduced to current themes that influence water governance including sustainable development, integrated water resource management, water rights and pricing, corruption, and equity for marginal groups. These themes will be explored at the local, national, and international levels to provide students with a holistic understanding of water governance issues.

SUMA PS4130 Sustainable Cities

Offered by MS in Sustainability Management Program

Area 1: Integrative Sustainability Management/ Area 3: Physical Dimensions/ Area 4: Public Policy

Call Number: 12250

Points: 3

Instructor: Jitendra Bajpai

Day/Time: Thursday, 4:10pm-6:00pm

Course Description: For the first time in history over half the world's population lives in urban areas. Today there are over 400 cities of more than million residents compared to 12 in 1900. By 2050 the

share of the world urban population is expected to reach 70 percent, and most growth will occur in developing world. As urban population growth continues, urban centers face the problems of aging infrastructure, economic growth, changing climate, congestion, pollution, and demands of inhabitants to enhance their quality of life. Cities consume 75 percent of world's energy and produce almost 80 percent of global GHG emissions. In response many cities are striving to be low carbon city while sustaining healthy economic and social life. But addressing the new urban agenda requires a new model of cooperation across sectors and all tiers of government to redirect the urban economic development into paths that are restorative. The purpose of this course is to prepare its students to understand, analyze, and develop policies and procedures to address the sustainability issues being faced by urban centers of developed and developing world, their decision-makers and inhabitants.

Offered by other departments:

ENVP U6320 Political Context of Environmental Management

Offered by the School of International and Political Affairs

Area 1: Integrative Sustainability Management/ Area 4: Public Policy

Points: 3

Call Number: 15563

Instructor: Sara Tjossem

Day/Time: Tuesday, 11:00am-12:50pm

Course Description: Many of the decisions we make and actions we take have profound environmental effects, yet economic and political considerations often dominate decision-making in a way that fails to take into account the environmental foundation of our livelihoods. A slow, yet steady extension of environmental imperatives into previously 'non' environmental sectors such as agriculture, trade and energy production, provide some movement towards sustainability. This class explores how the political system identifies public issues as problems requiring public action, and creates and implements policy solutions. It assesses what conditions foster change by anticipating likely outcomes and effective points of intervention to achieve policy goals. It emphasizes the politics of environmental policymaking, using energy, agriculture and forestry as cases of global enterprises with local to global scales of inquiry. We will explore the tension between the market and economic models and politics and political models of policymaking; interests and interest-group politics; the connections among expertise, knowledge, and policymaking; and the particular politics of policy issues that cross jurisdictional boundaries, including federalism and globalization. We will start the semester considering two contrasting theories of policymaking: an economic, market-based approach with application in environmental policy issues and a political approach. The latter constitutes a critique of the economic paradigm and sets up the tension between the concerns for policy efficiency and effectiveness stemming from the economic model, and those of equity, representation, and consensus derived from the political model. Participants will develop a sense of the history of environmental activism, relevant actors in environmental politics and management, their roles, sources of power and influence, the effects of formal political processes and the sources of potential conflicts.

INAF U4409 Political, Social & Economic Development in Brazil

Offered by the School of International and Public Affairs

Area 4: Public Policy

Call Number: 15583

Points: 1.5

Instructor: Sidney Nakahodo

Day/Time: Wednesday, 6:10pm-8:00pm

Course Description: This course is a practicum, which has been designed to enable you to discuss major problems of contemporary Brazil with important political figures, business representatives, activists and analysts. Normally the guest speaker will make an opening statement of approximately 40 minutes and the rest of the time will be devoted to a discussion. Guest speakers may recommend one or two articles or documents they have written, or that they think are particularly relevant, for the policy issues they will discuss.

INAF U6087 Environmental Advocacy

Area 4: Public Policy

Offered by the School of International and Public Affairs

Call Number: 15923

Points: 3

Instructors: Sara Tjossem

Day/Time: Monday, 11:00-12:50pm

Course Description: Recognition, prevention and resolution of environmental problems depends on effective environmental advocacy, but what constitutes effective collective action? Advocates typically argue that they represent the collective interests of the general public and underrepresented groups, and use a variety of tactics to express themselves over a range of scale. Government regulation and environmental science also often rely upon the product of advocacy to different degrees. How much has advocacy influenced environmental policy and political and civic engagement? This class examines the role of advocacy and science inside and outside the US environmental policy-making process, and addresses different approaches to environmental advocacy from the local to the global. Using both historical and contemporary sources, the course investigates how different groups experience the natural and built worlds, the interplay of citizens and science, the treatment of science by advocates and the media, and the role of advocates of various types in legislative, administrative and judicial decision making. It also takes a comparative approach of how other political systems (e.g. China) experience and responds to environmental advocacy. Along the way, we will explore connections between environmental change and social inequality, the rise of modern environmental politics, environmentalism and nationalism, and differing visions for the future of nature.

INAF U6802 International Law

Offered by the School of International and Public Affairs

Area 4: Public Policy

Call Number: 15764 (*Recitation section in addition: Call # 15765; Thursdays 11:00am - 12:50pm)

Points: 3

Instructor: Horst Fischer

Day/Time: Monday, 11:00am-12:50pm

Course Description: This course introduces students to the basic doctrines of public international law and considers their relationship to both international relations theory and a range of problems in current international politics. The course is aiming to provide a the normative framework to understand the present dimensions of international relations. Students are asked to consider the theoretical arguments, processes and frameworks that provide the structure of international law, and to analyze their practical application to world issues of current concern. A problem-oriented approach to various case studies will be used in both lectures and discussion sessions, including international trade disputes, climate change agreements, cyber attacks, military interventions and responses to human rights violations. The course will integrate methods, substance and domestic application of the international legal system.

5: General and Financial Management (6 pts.)

2 Courses in Public, Private or Nonprofit General or Financial Management

Offered by the Sustainability Management program:

SUMA PS5060 Sustainable Fashion & Startup Strategy

Offered by the MS in Sustainability Management Program

Area 5: General and Financial Management

Call Number: 22841

Points: 3

Instructor: Ammar Belal

Day/Time: Tuesday, 6:10pm-8:00pm

Course Description: Fashion's consistent ranking among the top 3 global polluters has become a decades old fact struggling to gain a proportionate response among the brand startup and sourcing community. With industry revenues set to exceed \$1 trillion, there is an opportunity to critically address existing revenue models predicated on traditional metrics, such as constant growth, and singular bottom lines. The course attempts to create a nexus between the fashion entrepreneur and systems thinker to explore strategic solutions that address sustainability through an environmental, social and economic lens. The aim is to foster a mindful, yet critical discourse on fashion industry initiatives, past and present, and to practice various tools that help transition existing organizations and incubate new startups towards sustainable outcomes.

SUMA PS5025 Corporate Sustainability Reporting and Strategy

Offered by the MS in Sustainability Management Program

Area 1: Integrative/ Area 5: General and Financial Management

Call Number: 12256

Points: 3

Instructor: Celine Ruben-Salama

Day/Time: Tuesday, 6:10pm-8:00pm

Course Description: The purpose of this course is to provide an overview of trends and best practices in corporate communications relating to sustainability, with a particular focus on global sustainability reporting frameworks and green marketing communications. It is designed for those who hold/will hold positions in organizations with responsibilities for communicating the sustainability goals, challenges and achievements, as well as accurately and honestly communicating the environmental aspects of an organization's products and services. Increasingly, large corporations are creating c-suite roles or dedicated departments to oversee this function. More typically, multiple functions contribute information such as: Corporate Communications, Marketing, Community Affairs, Public Policy, Environmental Health & Safety, R&D, Facilities, Operations and Legal. Benefits of reporting range from building trust with stakeholders, and uncovering risks and opportunities; to contributing to stronger long-term business strategy, and creating new products and services.

SUMA PS5142 Sustainable Finance (Online)

Offered by MS in Sustainability Management Program

Area 5: General and Financial Management

Call Number: 12559

Points: 3

Instructor: Bruce Kahn

Day/Time: Thursday, 8:10pm-10:00pm

Course Description: This course is an introduction to how sustainability/ESG (economic, environmental, social & governance) issues have become financially material to the global credit, underwriting, insurance, risk management, venture capital and asset management capital markets. These issues have a direct impact on risk exposure and the quality of public, private and government debt/equity investments. By the end of the course, students should understand how these issues affect investment decisions made by institutional investors, corporate lenders, insurance companies, asset management funds, hedge funds, venture capitalists and retail investors, as well as business decisions made by corporate managers. They will be exposed to the global sources of environmental/sustainability corporate performance information, how “best-in-class” environmental investment relates to, and is different from, socially-responsible investing (SRI), and differences between European, North American and Asian markets. Risk management aspects of sustainable finance will be addressed, especially in regards to emerging finance areas such as carbon finance, corporate governance, sustainable development and agriculture/water development projects. SEC Reporting requirements for sustainability risks and opportunities, and the prospect of the issuance of “Integrated Corporate Reports” that combine financial and sustainability reporting will be discussed. The ethics of sustainability issues and their impact on management & finance will also be addressed.

SUMA PS5170 Sustainable Operations

Offered by MS in Sustainability Management Program

Area 1: Integrative Sustainability Management/ Area 5: General and Financial Management

Call Number: 12260

Points: 3

Instructor: Vance Merolla

Day/Time: Thursday, 6:10pm-8:00pm

Course Description: In this course, students will work to understand and communicate the importance of identifying and incorporating sustainability at each step along the value chain, including product design, procurement, distribution, manufacturing, product use and end-of-life disposition. By considering the organization holistically, students will perform analyses of the value chain, including Life Cycle and Cost/Benefit Analyses, and incorporate effective sustainability strategies into the organizational culture and day-to-day operations. Students will conduct risk analyses and implement risk reduction measures in an effort to develop, produce, and distribute more sustainable products and services, aligned with overall business goals. In addition to technical sustainability considerations such as climate change, energy, water and waste, students will be able to implement sustainability initiatives within operating organizations through innovative change management, culture change and other organizational strategies. Importantly, students will be challenged to think concretely about making choices and balancing elements of the triple bottom line in an overall business context.

SUMA PS5195 Accounting, Finance, and Modeling of Sustainable Investments*

Offered by MS in Sustainability Management Program

Area 2: Economics/ Area 5: General and Financial Management

Call Number: 12261

Points: 3

Instructor: Brad Schwartz

Day/Time: Wednesday, 6:10pm-8:00 pm

***Note:** The course was formerly title “Green Accounting.” If you previously took the “Green Accounting” course, you are not eligible to take this course.

Course Description: This course examines traditional and emerging financial and cost accounting practices, non-financial sustainability performance metrics, their interdependencies and influence on corporate management, corporate reporting, and other systems. Students begin learning how financial

performance is presented within traditional financial reports and analyzed using benchmarks, ratios and through interconnections with real world trends. They obtain critical insights and an appreciation of how financial and non-financial accounting data and sustainability performance metrics influence shareholder and corporate management investment decisions, strategic priorities, budget allocations and capital investments.

SUMA PS5700 Ethics of Sustainability Management and Finance

Offered by MS in Sustainability Management Program

Area 1: Integrative Sustainability Management/ Area 5: General and Financial Management

Call Number: 12273

Points: 3

Instructor: Adela Gondek

Day/Time: Thursday, 6:10pm-8:00pm

Course Description: Today we see many new sustainability ethics propounded by organizations such as the UN, EU, OECD, and others, including many start-up organizations. What are these ethics, and how can they be applied in the form of ethics initiatives within other non-profit and governmental organizations, in addition to business organizations, with the aim of including stakeholders and combating corruption? In this course, we will examine the new ethics and discover how they can be implemented as ethics initiatives by sustainability managers, whose decisions typically have global, ecosystem, regional, organizational, workplace and personal dimensions. The course is divided into six sections corresponding to the various dimensions of sustainability and addressing the ethics associated with each. The first section addresses eco-justice and environmental justice; the second, ecological integrity and the land ethic; the third, regional equity and social sector (e.g. food, water, energy) justice; the fourth, social responsibility and responsible leadership; the fifth, transparency and inclusivity; and the sixth, the ethics of care and sensitivity coupled with rationality. The course readings include relevant cases in which the outcomes are shaped by ethical considerations or a deficiency of them. The course also addresses a growing movement towards global standardization of sustainability ethics, which increasingly entails the development of metrics serving as indicators of attentiveness or inattentiveness to ethics.

SUMA PS5650 Solar Project Development

Offered by the MS in Sustainability Management Program

Area 2: Economics/ Area 5: General and Financial Management

Points: 3

Call Number: 12272

Instructor: Dan Giuffrida

Day/Time: Thursday, 6:10pm-8:00pm

Course Description: At the end of this course, students will be prepared to fully evaluate the technical and financial aspects of a solar project. They will be equipped with skills allowing them to either develop or rigorously vet solar project proposals. The course introduces and provides students with a holistic understanding of the end-to-end solar development process. The course has two goals: A) To provide students a deep understanding of the dozens of critical interrelated steps critical to developing a successful operating solar project. B) To equip the students with the tools and understanding of the skills necessary to develop a solar project beginning with site selection encompassing the entire process to commissioning and operations. We begin the course providing the students with an understanding of the different segments of the solar industry; covering the upstream business, the main players both upstream and downstream and then outlining the different downstream markets: utility, commercial, and residential. We will then hone in on the distributed generation segment of the market; commercial, and residential. To begin, we will cover the critical value drivers of solar: sunlight resource, grid energy

cost, tax credits, state and utility incentives including renewable energy credit markets. Energy consumption and production, despite what critics will say about renewables, is the main value driver of the move to renewables. In that light, we will cover in detail, net metering, national and local electricity markets, and electric utility tariff structure to understand how value is generated and measured. We will conduct energy consumption analysis for different end-users to see how solar can and will be deployed and valued across different geographic and utility tariff classes.

SUMA PS5470 Circular Economy for Sustainability Professionals

Offered by MS in Sustainability Management Program

Area 5: General and Financial Management (*This course is not approved for the Area 2: Economics Requirement*)

Call Number: 12271

Points: 3

Instructor: Danielle Azoulay

Day/Time: Monday, 6:10pm-8:00pm

Course Description: A circular economy is an alternative economic model, that is restorative by design, and rather than relying on a constant throughput of newly extracted resources and non-renewable energy, aims to keep materials, products and components constantly at their highest utility and value. This course will delve into both the theory and practical applications of a circular economy. Achieving perfect circularity represents potentially transformative system change and will involve a fundamental re-think of many of our structures, systems and processes in the economy at large. At the same time, its value creation potential for businesses, households and the environment alike, is potentially extremely significant. For example, manufacturers can reclaim substantial value from the products they develop by introducing take-back schemes to reclaim components and resources for re-use or recycling, as opposed to allowing them to go to waste as would typically be the case in a linear system. We will explore the theoretical underpinnings of a circular economy, including the need for systems thinking (taking relevant learnings from biomimicry and industrial ecology). We will look to circular design principles and explore their use in different industries. We will pose the question of which stakeholders can help to facilitate this transition to circularity, and what enablers, in the form of policy and financing, will need to be in place to allow it to progress. The course will explore real-life examples of circular economic thinking in specific industries, such as the fashion and industry, as well as looking at its application in a geographic context through the lens of cities, and examining standalone infrastructure, such as waste management.

SUMA PS5197 Financing the Clean Energy Economy (Online)

Offered by MS in Sustainability Management Program

Area 5: General and Financial Management

Call Number: 12262

Points: 3

Instructor: Scott Fisher

Day/Time: Thursday, 6:10pm-8:00pm

Course Description: The green economy has grown significantly in the past several years. This course focuses on one aspect of that growth: the generation of clean energy. The course integrates finance, technology, and policy to provide an understanding of what has propelled the growth of clean energy, and what will be required to continue that growth in the context of the broader energy markets. The course will include a background on the existing electricity sector (nuclear, coal, natural gas) and how newer technologies (solar, wind, distributed generation) find a role. The course will cover some macro-issues (the role of government, for example), but will focus more on micro-level issues faced by companies developing and investing in clean energy projects. These issues include how existing electricity markets function and how individual plants function within those markets; how firms model

the profitability of their clean energy investments; the role of new technologies; and how policies affect individual clean energy investments. Course assignments will include problem sets, writing, a team project, and financial modeling. The financial modeling will be designed to take into account the varying levels of student experience.

Offered by other departments:

ERMC PS5100 Value-Based Enterprise Risk Management

Offered through the School of Professional Studies

Area 5: General and Financial Management

Points: 3

Call Number: 12668 (Section 001), 12669 (Section D02 Online) ***Please note: These courses are directly open to MS ERM students only. Non-ERM students must contact erm@sps.columbia.edu for ERM program approval to register***

Instructor: Sim Segal (Section 001), Rajeev Dave (Section D02)

Dates and Times: Thursday, 6:10pm-8:00pm (Section 001), Monday, 8:10pm-10:00pm (Section D02)

Course Description: Foundational ERM course. Addresses all major ERM activities: risk framework; risk governance; risk identification; risk quantification; risk decision making; and risk messaging. Introduces an advanced yet practical ERM approach based on the integration of ERM and value-based management that supports integration of ERM into decision making. Provides a context to understand the differences between (a) value-based ERM; (b) traditional ERM; and (c) traditional "silo" risk management.

ERMC PS5200 Traditional Risk & ERM Practices

Offered through the School of Professional Studies

Area 5: General and Financial Management

Points: 3

Call Number: 12670 (Section 001), 12671 (Section 002), 12673 (Section 003), 12674 (Section 004), 12675 (Section 005), 12676 (Section 006), 12677 (Section 007), 12678 (Section D08 Online), 14424 (Section 009) ***Please note: These courses are directly open to MS ERM students only. Non-ERM students must contact erm@sps.columbia.edu for ERM program approval to register***

Instructor: Fenton Aylmer (Section 001), TBD (Section 002), Marianna Belyavskiy (Section 003), Gemini Yadav (Section 004), TBD (Section 005), Celia Kapsomera (Section 006), Raj Mittal (Section 007), Chris Magno (Section D08 Online), TBD (Section 009)

Dates and Times: Wednesday 8:10pm-10:00pm (Section 001), Thursday 8:10pm-10:00pm (Section 002), Wednesday 6:10pm-8:00pm (Section 003), Monday 8:10pm-10:00pm (Section 004), Tuesday 6:10pm-8:00pm (Section 005), Monday 6:10pm-8:00pm (Section 006), Thursday 6:10pm-8:00pm (Section 007), Tuesday 6:10pm-8:00pm (Section D08 Online), Tuesday 8:10pm-10:00pm (Section 009)

Course Description: Two distinct topics in this course: (1) Traditional ERM frameworks (such as COSO, ISO 31000) and their tools, techniques, and risk vocabulary; and (2) Traditional "silo" risk management grouped into the four risk categories – strategic, operational, financial, and insurance – as well as traditional risk management practices at banks and insurance companies. Provides familiarity with a range of current ERM and risk practices in the market.

ERMC PS5340 Operational Risk Management

Offered through the School of Professional Studies

Area 5: General and Financial Management

Points: 3

Call Number: 12697 (Section 001), 12698 (Section 002), 12699 (Section 003), 12700 (Section D04 Online)

Please note: Open for cross-registration on September 8

Instructor: Prasad Kodali (Section 001), Rossano Rossi (Section 002), TBD (Section 003), Umesh Akki (Section D04 Online)

Dates and Times: Thursday 6:10pm-8:00pm (Section 001), Wednesday 8:10pm-10:00pm (Section 002), Monday 8:10pm-10:00pm (Section 003), Tuesday 6:10pm-8:00pm (Section D04 Online)

Course Description: Review of the types of operational risks, such as technology risk (e.g., cyber-security), human resources risk, disasters, etc. Includes case studies, risk analysis frameworks and metrics, and common mitigation techniques, such as insurance, IT mitigation, business continuing planning, etc.

BUSI PS5001 Introduction to Finance

Offered by the School of Professional Studies

Area 5: General and Financial Management

Call Number: 12634 (Section 001), 12635 (Section 3), 12636 (Section D02 Online)

Points: 3

Instructors: Mario Gonzalez-Corzo (Section 001), Eleni Vrana (Section 3), Stephen Hurley (Section D02 Online)

Day/Time: Thursday 6:10pm-8:00pm (Section 001), Tuesday 6:10pm-8:00pm (Section 003), Monday 8:10pm-10:00pm (Section D02 Online)

Course Description: Students will be introduced to the fundamental financial issues of the modern corporation. By the end of this course, students will understand the basic concepts of financial planning, managing growth; debt and equity sources of financing and valuation; capital budgeting methods; and risk analysis, cost of capital, and the process of securities issuance.

BUSI PS5003 Corporate Finance

Offered by the School of Professional Studies

Area 5: General and Financial Management

Call Number: 12637 (Section 001), 12638 (Section 003), 12639 (Section D02 Online)

Points: 3

Instructors: Hany Guirguis (Section 001), John Van Ness (Section 003), Kevin Sweeney (Section D02 Online)

Day/Time: Thursday 6:10pm-8:00pm (Section 001), Friday 2:10pm-4:00pm (Section 003), Tuesday 8:10pm-10:00pm (Section D02 Online)

Course Description: Students will learn the critical corporate finance concepts including: financial statement analysis; performance metrics; valuation of stocks and bonds; project and firm valuation; cost of capital; capital investment strategies and sources of capital, and firm growth strategies. At the end of this course students will understand how to apply these concepts to current business problems.

Prerequisites: BUSI PS5001 Introduction to Finance/or Professor Approval is required.

BUSI PS5008 Options and Futures

Offered by the School of Professional Studies

Area 5: General and Financial Management

Call Number: 12641

Points: 3

Instructors: Christos Giannikos

Day/Time: Wednesday, 6:10pm-8:00pm

Course Description: Students will learn about financial derivative securities: their role in financial management is becoming increasingly important, especially in portfolio management. By the end of this course students will be able to identify valuation of various options and futures as well as their use in risk management. By the end of this course, students will be able to understand option and futures

pricing models, option strategies and index arbitraging. Prerequisites: BUSI K4001 Intro to Finance and BUSI K4003 Corporate Finance or Professor Approval required

BUSI PS5009 Financial Accounting

Offered by the School of Professional Studies

Area 5: General and Financial Management

Call Number: 12642 (Section 001), 12643 (Section 003), 12644 (Section D02 Online), 13641 (Section 004)

Points: 3

Instructors: Marc Blatter (Section 001), Benedict O Okoh (Section 003), Rebecca Shaffer (Section D02 Online), Amir Ziv (Section 004)

Day/Time: Tuesday 6:10pm-8:00pm (Section 001), Wednesday 8:10pm-10:00pm (Section 003), Wednesday 8:10pm-10:00pm (Section D02 Online), Thursday 8:40am-9:55am (Section 004)

Course Description: Students will examine the generally accepted account principles (GAAP) underlying financial statements and their implementation in practice. The perspective and main focus of the course is from the users of the information contained in the statements, including investors, financial analysts, creditors and, management. By the end of this class students will be able to construct a cash flow statement, balance sheet and decipher a 10K report.

BUSI PS5010 Managing Human Behavior in the Organization

Offered by the School of Professional Studies

Area 5: General and Financial Management

Call Number: 12645 (Section 001), 12646 (Section 003), 12647 (Section 004), 12649 (Section D02 Online)

Points: 3

Instructors: Edward F Pasquina (Section 001), Young Mi Park (Section 003), Jaqueline Strayer (Section 004), John Bockstoe (Section D02 Online)

Day/Time: Thursday 8:10pm-10:00pm (Section 001), Monday 8:10pm-10:00pm (Section 003), Friday 12:10pm-2:00pm (Section 7), Tuesday 8:10pm-10:00pm (Section D02 Online)

Course Description: Students will gain an overview of major concepts of management and organization theory, concentrating on understanding human behavior in organization contexts, with heavy emphasis on the application of concepts to solve managerial problems. By the end of this course students will have developed the skills to motivate employees, establish professional interpersonal relationships, take a leadership role, and conduct performance appraisal.

BUSI PS5015 Leading Alignment and Agility

Offered by the School of Professional Studies

Area 5: General and Financial Management

Call Number: 14040 (Section D01 Online)

Points: 3

Instructors: Ric Oslin

Day/Time: Monday, 8:10pm-10:00pm

Course Description: This course explains how leaders build competitive advantage within their organizations by creating a clear purpose; then balance it with agile practices that leverage, challenge and evolve that purpose. It explores how leaders use neuroscience-based techniques to unlock performance and adaptability as the speed of change continues to accelerate.

BUSI PS5020 Introduction to Marketing

Offered by the School of Professional Studies

Area 5: General and Financial Management

Call Number: 12780 (Section 001), 12781 (Section D02 Online)

Points: 3

Instructors: Beth Hirschhorn & Jenny M Fernandez (Section 001), Lauri Harrison (Section D02 Online)

Day/Time: Monday 6:10pm-8:00pm (Section 001), Tuesday 8:10pm-10:00pm (Section D02 Online)

Course Description: Students will learn fundamental marketing concepts and their application. By the end of this class you will know: the elements of a market, company strategy, how to identify customers and competition, the fundamental elements of the marketing mix (product, price, placement and promotion) how to research consumer behavior, and pricing strategies. Students will have extensive use of case study projects.

BUSI PS5025 Marketing Strategy

Offered by the School of Professional Studies

Area 5: General and Financial Management

Call Number: 12782

Points: 3

Instructors: Sandy Becker

Day/Time: Monday, 6:10pm-8:00pm

Course Description: Students will develop analytical skills used to formulate and implement marketing driven strategies for an organization. Students will develop a deeper understanding of marketing strategies and how to implement tactics to achieve desired goals. Students will work on case study projects in both individual and a team based projects. By the end of this course you will be able to develop a marketing strategy based market assessments and company needs. Prerequisites: BUSI PS5020 Introduction to Marketing/or Professor Approval is required.

BUSI PS5040 Security Analysis

Offered by the School of Professional Studies

Area 5: General and Financial Management

Call Number: 12788 (Section 001), 12789 (Section 002)

Points: 3

Instructors: Perry Beaumont (Section 001 and Section 002)

Day/Time: Monday 6:10pm-8:00pm (Section 001), Monday 8:10-10:00pm (Section 002)

Course Description: Students will learn about the valuation of publicly traded equity securities. By the end of the semester students will be able to perform fundamental analysis ("bottom-up," firm-level, business and financial analysis), prepare pro forma financial statements, estimate free cash flows and apply valuation models. Prerequisites: BUSI PS5001 Intro to Finance and BUSI KPS5003 Corporate Finance or Professor Approval required.

INAF U6054 Petroleum Markets & Trading

Area 5: General and Financial Management

Offered by the School of International and Public Affairs

Call Number: 15624

Points: 3

Instructors: Louise Burke

Day/Time: Tuesday, 4:10pm-6:00pm

Course Description: This course surveys the physical and paper components of the global oil market. It focuses on the geological, economic, financial, institutional, and political factors and processes through which global oil prices are determined. The course is only about oil - not about other energy or other commodities, though they may be discussed. The course is MARKET-focused. It does not deal with country development/planning, though it may be discussed in passing; nor does it deal with oil companies' financial statements and equity valuations.

