

# EN.660 (CENTER FOR LEADERSHIP EDUCATION)

## **EN.660.100. Hopkins Leadership Challenge Seminar. 1 Credit.**

The Hopkins Leadership Challenge seminar is designed specifically for all incoming freshman. The classroom content will include discussions with current university leaders and will serve as an introduction to the history, services and involvement opportunities open to JHU undergraduates. The seminars will include discussion and assignments from The Leadership Challenge by Kouzes and Posner. The experiential component of the course will include programs designed to enhance classroom content and expose students to the on campus and off campus involvement opportunities available.

Area: Social and Behavioral Sciences

## **EN.660.104. Exploring Leadership: For Hopkins Students Who Want to Make a Difference. 1 Credit.**

A two-week seminar and experiential program designed to provide the following learning outcomes for students enrolled: 1. Understand self-others and how to work effectively in communities. 2. Understand the importance of integrity, moral purpose, and positive change. 3. Understand how change occurs and why people resist or promote change. 4. Understand the importance of enhancing and applying individual team strengths, developing greater levels of wellbeing for you and in others, and thriving together as individuals and organizations. 5. Form positive connections and relationships with upper class students and alumni in areas of career interests.

## **EN.660.105. Introduction to Business. 4 Credits.**

This course is designed as an introduction to the terms, concepts, and values of business and management. The course comprises three broad categories: the economic, financial, and corporate context of business activities; the organization and management of business enterprises; and, the marketing and production of goods and services. Topic specific readings, short case studies and financial exercises all focus on the bases for managerial decisions as well as the long and short-term implications of those decisions in a global environment. No audits.

Area: Social and Behavioral Sciences

## **EN.660.106. Clark Scholars Leadership Challenge. 1 Credit.**

The Clark Scholars Leadership Challenge is a one credit pass/fail seminar and is designed specifically for the Clark Scholars at JHU who are interested in developing their leadership skills and applying those skills to Hopkins life. The seminar includes both a classroom component and an experiential component. The classroom content includes leadership topics, discussions with university leaders and serves as an introduction to the history, services and involvement opportunities at Hopkins. The experiential component includes programs such as JHU history, faculty student interaction, visits to other JHU campuses and more! Clark Scholars only. S/U only.

Area: Social and Behavioral Sciences

## **EN.660.107. Leadership Concepts. 1 Credit.**

Leadership Concepts is a seminar is designed specifically for second year undergraduates at JHU and is limited to that population. A seven-week seminar and experiential program designed to provide the following learning outcomes for students enrolled: 1. Understand self-others and how to work effectively in communities 2. Understand the importance of integrity, moral purpose, and positive change. 3. Understand how change occurs and why people resist or promote change. 4. Understand the importance of enhancing and applying individual team strengths, developing greater levels of well being for you and in others, and thriving together as individuals and organizations. 5. Form positive connections and relationships with upper class students and alumni in areas of career interests.

Area: Social and Behavioral Sciences

## **EN.660.111. Civic Engagement Service and Leadership. 1 Credit.**

Civic Engagement Service and Leadership is a seminar is designed specifically for first and second year undergraduates at JHU and is limited to that population. A seven-week seminar and experiential program designed to provide the following learning outcomes for students enrolled: 1. Understand self-others and how to work effectively in communities 2. Understand the importance of integrity, moral purpose, and positive change. 3. Understand how change occurs and why people resist or promote change. 4. Understand the importance of enhancing and applying individual team strengths, developing greater levels of well being for you and in others, and thriving together as individuals and organizations. 5. Form positive connections and relationships with upper class students and alumni in areas of career interests.

Area: Social and Behavioral Sciences

## **EN.660.200. Principles of Finance. 3 Credits.**

This course covers central issues in financial management and corporate finance. Students will learn how financial managers make investment, financing and other decisions and what are the tools they use to reach such decisions. Topics covered include time value of money, risk, valuation, capital structure, capital budgeting, dividend policy and mean-variance portfolio selection. The course provides the analytical tools and the financial theories needed to implement sound financial decisions within a corporation (and outside of a corporation). Ideas are presented in a cohesive way within the framework of the no-arbitrage principle, the fundamental principle shaping all aspects of modern finance. Command of the subject is crucially important for anyone considering a career not only in investment banking, investment management or trading, but also in general management, corporate strategy, management consulting, entrepreneurship, and the non-profit world.

**Prerequisite(s):** EN.660.105 OR AS.180.102

Area: Engineering, Quantitative and Mathematical Sciences

## **EN.660.203. Financial Accounting. 3 Credits.**

The course in Financial Accounting is designed for anyone who could be called upon to analyze and/or communicate financial results and/or make effective financial decisions in a for-profit business setting. No prior accounting knowledge or skill is required for successful completion of this course. Because accounting is described as the language of business, this course emphasizes the vocabulary, methods, and processes by which all business transactions are communicated. The accounting cycle, basic business transactions, internal controls, and preparation and understanding of financial statements including balance sheets, statements of income and cash flows are covered. No audits.

**EN.660.250. Identifying and Capturing Markets. 3 Credits.**

In this course, students will learn how to identify individual and organizational market needs through entrepreneurial thinking. Exposure to a broad range of organizations—from startups to more established businesses, and a variety of industry sectors, including information technology, healthcare, biomedical engineering, transportation, mass media and energy—will provide students with insight into the role that marketing plays in an organization's ability to identify, capture and grow these markets.

**EN.660.270. Clark Scholar Engineering Design I. 1 Credit.**

In this course, Clark Scholar students will learn and practice the first stages of design thinking. Students will engage with both industry and academic professionals to identify new innovation targets for future design projects. Additional topics will include multifaceted problem assessment and project selection for Engineering Design II.

**EN.660.300. Managerial Finance. 3 Credits.**

This course is designed to familiarize the student with the basic concepts and techniques of financial management practice. The course begins with a review of accounting, securities markets, and the finance function. The course then moves to discussion of financial planning, financial statement analysis, time value of money, interest rates and bond valuation, stock valuation, and concludes with capital budgeting and project analysis. A combination of classroom discussions, problem sets, and case studies will be used. No audits.

**Prerequisite(s):** EN.660.203

**EN.660.303. Managerial Accounting. 3 Credits.**

This course introduces management accounting concepts and objectives including planning, control, and the analysis of sales, expenses, and profits. Major topics include cost behavior, cost allocation, product costing (including activity based costing), standard costing and variance analysis, relevant costs, operational and capital budgeting, and performance measurement. No audits.

**Prerequisite(s):** EN.660.203

**EN.660.308. Business Law I. 3 Credits.**

This course is designed to provide students an introduction to legal reasoning and analysis. Content distinguishes forms of business, civil versus criminal law, and agency principles; intellectual property concepts, contract Law, the UCC (Uniform Commercial Code) and consumer protection are explored and discussed in the context of assigned legal cases which are intended to develop a student's ability to analyze and apply law. Note: not open to students who have taken 660.205 Business Law I. No audits.

**Prerequisite(s):** EN.660.105

Area: Social and Behavioral Sciences

**EN.660.310. Case Studies in Business Ethics. 3 Credits.**

This course is designed as a workshop using case studies to introduce students to the ethical concepts that are relevant to resolve moral issues in contemporary business and social settings—both global and personal in nature. Students will learn the reasoning and analytical skills needed to apply ethical concepts to their own decision-making, to identify moral issues involved in the management of specific problem areas in business and society, and to understand the social and natural environments which give rise to moral issues. The course focus is on performance articulated by clear reasoning and effective verbal and written communication concerning ethical issues in business and society. Not open to students who have taken EN.660.231 Case Studies in Business Ethics. No audits.

Area: Humanities

**EN.660.311. Law and the Internet. 3 Credits.**

Sometimes called "Cyber law," this course uses the case study method to examine some of the most significant and compelling legal aspects, issues, and concerns involved with operating a business enterprise in an Internet environment. Some of the issues likely to be covered include jurisdiction, resolution of online disputes, trademarks, copyright, licenses, privacy, defamation, obscenity, the application of traditional concepts of tort liability to an Internet context, computer crime, information security, taxation, international considerations, and an analysis of other recent litigation and/or statutes. Pre-requisite of EN.660.205 or EN.660.308 or by permission of instructor. Note: not open to students who have taken EN.660.306 Law and the Internet. No audits.

**Prerequisite(s):** EN.660.205 OR EN.660.308

Area: Social and Behavioral Sciences

**EN.660.321. Managing & Marketing Social Enterprises. 3 Credits.**

This course focuses on preparing students to engage in and lead social enterprises as we explore the options for creating social value. Using a combination of lecture, case study and project work, we investigate both for-profit and non-profit models for creating social value with special emphasis on the non-profit community. Particular emphasis is placed on the management challenges of social enterprises such as creating and conveying their message, options for dealing with finances, relationships within communities, and methods for building constituencies. Additionally, we address critical issues such as measures of success, scale, replication and failure. The class requires contact with organizations in the community as well as one long weekend away from campus. Recommended Course Background: EN.660.105 or EN.660.333 or EN.660.220/EN.660.340. No audits.

Writing Intensive

**EN.660.329. Social Entrepreneurship Theory and Practice. Community Based Learning. 3 Credits.**

Learn the principles, values and skills necessary to lead and succeed in organizations that make a positive difference in today's world. The course is designed to help students identify and provide opportunities to enhance their leadership skills. A "Blueprint for Success" will provide the framework for students to cultivate their own ideas for new socially conscious entrepreneurial ventures. Students will hear from successful current leaders in the field of social entrepreneurship and be provided the opportunity to network with JHU alumni, faculty and staff who are working or volunteering in for-profit or non-profit entities through occupations that make a difference. An application will be required.

Area: Social and Behavioral Sciences

Writing Intensive

**EN.660.331. Leading Teams. 3 Credits.**

This course will allow students to develop the analytical skills needed to effectively lead and work in teams. Students will learn tools and techniques for problem solving, decision-making, conflict resolution, task management, communications, and goal alignment in team settings. They will also learn how to measure team dynamics and performance, and assess methods for building and sustaining high-performance teams. Students will also explore their own leadership, personality and cognitive styles and learn how these may affect their performance in a team. The course will focus on team-based experiential projects and exercises as well as provide opportunities to individually reflect and write about the concepts explored and skills gained throughout the course. No Audits. Recommended Course Background: EN.660.332 or EN.660.333.

**EN.660.332. Leadership Theory. 3 Credits.**

Students will be introduced to the history of Leadership Theory from the 'Great Man' theory of born leaders to Transformational Leadership theory of non-positional learned leadership. Transformational Leadership theory postulates that leadership can be learned and enhanced. The course will explore the knowledge base and skills necessary to be an effective leader in a variety of settings. Students will assess their personal leadership qualities and develop a plan to enhance their leadership potential. No audits.

Area: Social and Behavioral Sciences  
Writing Intensive

**EN.660.333. Leading Change. 3 Credits.**

In this course, we will use a combination of presentation, discussion, experiential learning, research, and self-reflection to investigate issues surrounding leadership and change in communities and the economy. While considering both for-profit and non-profit entities, we will pursue topics including understanding and using theories of change, finding competitive advantage and creating strategic plans; making decisions, even in uncertain times; valuing differences; employing leadership styles; giving and receiving feedback; understanding employee relations; creating performance measures; and developing organizational cultures; and using the dynamics of influence. No audits.

Writing Intensive

**EN.660.335. Negotiation and Conflict Resolution. 3 Credits.**

The focus of this class is the nature and practice of conflict resolution and negotiation within and between individuals and organizations. The primary format for learning in this class is structured experimental exercises designed to expose students to different aspects of negotiation and to build tangible skills through interpersonal exchange. While some class time is devoted to presentations on theories and approaches, the class method primarily relies on feedback from fellow classmates on their observations of negotiation situations and on personal reflections by students after each structured experience. Topics include conflict style, negotiation, and group conflict. No audits. Recommended Course Background: EN.660.105, an additional course in the Entrepreneurship and Management Program or in the social sciences.

**Prerequisite(s):** EN.660.105

**EN.660.340. Principles of Management. 3 Credits.**

This course introduces the student to the management process. The course takes an integrated approach to management by examining the role of the manager from a traditional and contemporary perspective while applying decision-making and critical-thinking skills to the challenges facing managers in today's globally diverse environment. The course examines the techniques for controlling, planning, organizing resources and leading the workforce. Recommended Course Background: EN.660.105.

**EN.660.341. Business Process and Quality Management. 3 Credits.**

This course focuses on both quantitative and qualitative analytical skills and models essential to operations process design, management, and improvement in both service and manufacturing oriented companies. The objective of the course is to prepare the student to play a significant role in the management of a world-class company which serves satisfied customers through empowered employees, leading to increased revenues and decreased costs. The material combines managerial issues with both technical and quantitative aspects. Practical applications to business organizations are emphasized. Recommended Course Background: EN.660.105 Introduction to Business or EN.660.241 IT Management. No audits

Writing Intensive

**EN.660.343. Operations and Service Management. 3 Credits.**

This course aims to (1) direct your attention to fundamental problems and issues confronting all operations managers, (2) provide you with language, concepts, and insights which will help you to deal with these issues in order to gain competitive advantage through operations, and (3) further develop your ability to use analytical approaches and tools to understand and handle various managerial situations. Because the course deals with the management of "processes", it applies to both for-profit and non-profit organizations, to both service and manufacturing organizations, and to virtually any functional area or industry.

**Prerequisite(s):** EN.660.105 OR AS.180.102

**EN.660.352. New Product Development. 3 Credits.**

New product development is the ultimate interdisciplinary entrepreneurial art, combining marketing, technical, and managerial skills. A successful product lies at the intersection of the user's need, a technical solution, and compelling execution. This class will bootstrap your experience in the art through exercises and team projects. We will examine products and services, consumer and industrial, simple and technologically complex. Case studies will feature primary sources and the instructor's personal experiences as an inventor for a major consumer products company. Topics will span the product development cycle: identifying user needs, cool-hunting, brainstorming, industrial design, prototyping techniques, market research to validate new ideas, and project management -- especially for managing virtual teams and foreign manufacturers. No audits.

**Prerequisite(s):** EN.660.250 OR EN.500.101 OR EN.510.106 OR EN.520.137 OR EN.530.111 OR EN.560.141 OR EN.570.108 OR EN.580.111

Area: Engineering

**EN.660.355. Sports Marketing. 3 Credits.**

This course will allow students to apply marketing principles and concepts to the sports marketing environment while gaining an understanding of how event sponsorships, endorsements, licensing and naming rights are used to achieve business objectives. Through case studies and a group project, students will be exposed to a broad range of sports entities including professional sports teams, governing organizations and sports media.

**Prerequisite(s):** EN.660.250

**EN.660.357. Copywriting and Creative Strategy. 3 Credits.**

Uncover the process of creative thinking for innovation and conceiving 'big ideas' in marketing. Students will be exposed to creative theory and practice as they select a consumer product and determine strategic market positioning, target demographics, media vehicles and creative guidelines. Then students will learn the craft of advertising copywriting for print, broadcast and digital media as they develop finished creative executions for the chosen organization that all build to a complete integrated marketing campaign. No audits.

Writing Intensive

**EN.660.358. International Marketing. 3 Credits.**

This course covers product, pricing, promotion, distribution, market research, organization and implementation and control policies relating to international marketing. It also explores the economic, cultural, political and legal aspects of international marketing. Through interactive and application-oriented assignments and cases, students will gain hands-on experience in analyzing and developing marketing strategies for organizations that market both consumer and business products/ services internationally. The client-based project allows every student to be part of a global team (students from Universities around the world) that communicates through an on-line platform, and works on actual client deliverables. One or more local international marketers will be invited to speak to the class. Prerequisite: 660.250 Principles of Marketing.

**Prerequisite(s):** EN.660.250

**EN.660.361. Engineering Business and Management. 3 Credits.**

When engineers become working professionals, especially if they become managers, they must juggle knowledge of and tasks associated with operations, finance, ethics, strategy, team citizenship leadership and projects. While engineers' success may depend on their direct input -- the sweat of their own brow -- managers' success depends on their ability to enlist the active involvement of others: direct reports, other managers, other team members, other department employees, and those above them on the organizational chart. You will learn these concepts and skills in this course. In this course, you will learn about teamwork and people management, and gain an introduction to strategy, finance, and project management. You will practice writing concise persuasive analyses and action plans and verbally defending your ideas. Cross-listed with Mechanical Engineering. Please note that this course will not be available in the spring.

Area: Engineering

**EN.660.363. Leadership & Management in Materials Science and Engineering. 3 Credits.**

In this course, you will learn about leadership, social responsibility, strategy, finance, project management and people management specifically in the materials science and engineering fields. You will practice writing concise persuasive analyses and action plans and verbally defending your ideas. You will learn the ethical guidelines for the materials science profession, to resolve team conflicts and co-lead self-managed work teams, and determine how materials science supports society's sustainability goals and the social responsibilities of materials scientists. Our class time will feel like a business meeting, and we will refer to class periods as meetings. When you complete this course, you will be prepared to be a working professional. Your Teaching Team looks forward to seeing you develop into a career engineer, scientist, manager, entrepreneur, professor or other professional over the years.

Area: Engineering, Natural Sciences

**EN.660.380. Clark Scholar Engineering Design II. 1 Credit.**

In this course Clark Scholar students will continue their training in design thinking. Students will focus on both the identification of needs and the assessment of these needs for project selection. This course will consist of in class workshops and field immersion exercises.

**EN.660.381. Clark Scholar Engineering Design III. 1 Credit.**

In this course Clark Scholar students will continue their training in design thinking. Students will focus on both the identification of needs and the assessment of these needs for project selection. This course will consist of in class workshops and field immersion exercises. For Clark Scholar Junior's only.

Area: Engineering, Natural Sciences

**EN.660.400. Practical Ethics for Future Leaders. 2 Credits.**

This is an interdisciplinary course on leadership, decision making, and the application of ethics to real world problems. JHU students are future leaders of innovation across many fields, including but not limited to engineering, business, law, journalism, government, science and medicine. The awesome power of emerging technologies to modify our world - our food supply, our health, even people - will only increase and become more pressing in coming years. The goal of this course is to give students a deep and practical grounding in how leaders make decisions, and in particular difficult decisions where there is no clearly right answer. In this two-credit course, we will cover important concepts in the practical application of ethics; in decision making; and leadership. There is a companion 1-credit course, EN.660.406 which forms a second part of the course, and which will take a deep look at a major ethical issue resulting from the newfound capabilities made possible by emerging technologies. Students of EN.660.400 can choose whether or not to register for EN.660.406. This course includes online lectures, readings and substantial discussion components, as well as weekly meetings in small sections. The course spans the first two thirds of the semester, leaving the final third of the semester available for the 1-credit EN.660.406.

Area: Humanities

**EN.660.404. Business Law II. 3 Credits.**

Building on the material from Business Law I, topics examined include entrepreneurship, business entities and business formation, principles of agency, real property, personal property, bailments, bankruptcy, secured transactions, employment discrimination, business financing, investor protection, antitrust and environmental law. No audits.

**Prerequisite(s):** EN.660.205 OR EN.660.308

Area: Social and Behavioral Sciences

**EN.660.406. Practical Ethics for Future Leaders - Special Topic. 1 Credit.**

This is a one-credit course that serves as a companion and second part to the Practical Ethics course EN.660.400, which is a co-requisite for this course. In this one-credit course, we will take a deep look at a major ethical issue resulting from the newfound capabilities made possible by emerging technologies. The students will work together in small groups, across multiple meetings with flexible scheduling, to discuss and make decisions on real-world decisions. Previous years topics included the release of genetically modified mosquitoes in Florida, and the presence of human decision-makers 'in the loop' for military and surgical autonomous robots. This course takes place in the final one third of the semester, leaving the first two-thirds of the semester available for the 2-credit EN.660.400. Students should register for the same section number in EN.660.406 as they do for EN.660.400.

**Prerequisite(s):** Previous completion of or concurrent enrollment in EN.660.400 required.

Area: Humanities

**EN.660.410. Computer Science Innovation and Entrepreneurship. 3 Credits.**

This course is designed to give students in CS the requisite skills to generate and screen ideas for new venture creation and then prepare a business plan for an innovative technology of their own design. These skills include the ability to incorporate into a formal business case all necessary requirements, including needs identification and validation; business and financial models; and, market strategies and plans. Student teams will present the business plan to an outside panel made up of practitioners, industry representatives, and venture capitalists. In addition, this course functions as the first half of a two course sequence, the second of which will be directed by CS faculty and focus on the actual construction/programming of the business idea. Restricted to Juniors and Seniors majoring in Computer Science or by permission of instructor.

**EN.660.411. Corporate Strategy and Business Failure. 3 Credits.**

The purpose of this course is to bring together theories of corporate strategy and the tools and techniques of strategy consulting. Students will address these in terms of historical case studies where they will have the opportunity to 'fix' famous examples of corporate failure. Students will analyze the political, economic, social, and technological contexts of these cases while applying standard tools to the analysis of competing strategic plans.

**Prerequisite(s):** EN.660.105

Area: Social and Behavioral Sciences

**EN.660.414. Financial Statement Analysis. 3 Credits.**

This course is designed to increase a student's ability to read and interpret financial statements and related information under both GAAP and IFRS (International Financial Reporting Standards). In addition to a review of the basic financial statements and accounting principles, the course will use industry and ratio analysis in addition to benchmarking and modeling techniques to encourage students to think in a more creative way when analyzing historic information or when forecasting financial statements. Students will assess firm profitability and risk, value assets and use spreadsheet models for financial forecasting and decision making. No audits.

**Prerequisite(s):** EN.660.203

**EN.660.419. Strategy Consulting. 3 Credits.**

The purpose of this course is to provide students with a background in, and opportunity to experience, business design and strategy consulting in an organizational setting. Business design is fundamentally about identifying and solving the problems that prevent an organization from moving forward, from realizing its goals. Students will form teams, work with an outside sponsor, and treat the experience as a living case. They will explore the problem presented by the sponsor (client), conduct in-depth interviews to validate the problem, design appropriate solutions, and complete the project by developing an implementation plan. Student teams will formally present all of this to the sponsor at the end of the term. This serves as a capstone for the Entrepreneurship & Management minor.

**Prerequisite(s):** EN.660.105 AND EN.660.203 AND (EN.661.110 OR EN.661.250)

Area: Engineering, Natural Sciences

**EN.660.420. Marketing Strategy. 3 Credits.**

This writing intensive course helps students develop skills in formulating, implementing, and controlling a strategic marketing program for a given product-market entry. Using a structured approach to case analysis, students will learn how to make the kinds of strategic marketing decisions that will have a long-term impact on the organization and support these decisions with quantitative analyses. Through textbook readings, students will learn how to identify appropriate marketing strategies for new, growth, mature, and declining markets and apply these strategies as they analyze a series of marketing cases. The supplementary readings, from a broad spectrum of periodicals, are more applied and will allow students to see how firms are addressing contemporary marketing challenges. In addition to analyzing cases individually, each student will be part of a team that studies a case during the latter half of the semester, developing marketing strategy recommendations, including financial projections, and presenting them to the class. No audits.

**Prerequisite(s):** EN.660.250

Writing Intensive

**EN.660.446. Multidisciplinary Technical Teams. 3 Credits.**

Leaders – whether of a team or an organization—are charged with setting, communicating, and overseeing the implementation of a vision. Leaders ensure sustainable growth and targeted change. Leaders and members of teams that are integrated across multiple engineering and science disciplines, face special challenges regarding managing innovation, creating a team environment that facilitates experimentation, providing a balance of autonomy and collegial support, maintaining technical expertise, and facilitating inter-disciplinary communication.

Area: Engineering, Natural Sciences

Writing Intensive

**EN.660.450. Advertising & Integrated Marketing Communication. 3 Credits.**

This course builds on the promotional mix concepts covered in Principles of Marketing (EN.660.250) –advertising, public relations, sales promotion and personal selling. Students will learn how marketers are changing the ways they communicate with consumers and the ways in which promotional budgets are allocated—and how this impacts the development of marketing strategies and tactics. Working with a client (provided by EdVenture Partners) that has chosen this JHU class as its 'advertising agency' and an actual budget provided by the firm, the class will form small teams to mirror the functional organization of an actual ad agency (market research, media strategy/planning, copywriting/design, public relations, etc.). Student teams will then develop a promotional plan and corresponding budget to reach the desired target market (JHU undergrads who meet the client's criteria), implement the plan and then evaluate its effectiveness through pre- and post campaign market research conducted on the target consumer. Note: Not open to students who have taken EN.660.450 as Advertising and Promotion. No audits. (Formerly Advertising and Promotion.)

**Prerequisite(s):** EN.660.250

**EN.660.453. Social Media and Marketing. 3 Credits.**

This course explores strategies for monitoring and engaging consumers in digital media. Students will gain practical knowledge about developing, implementing and measuring social media marketing campaigns. They will learn how to analyze what consumers are saying and connect with them by leveraging word of mouth, viral and buzz marketing through sites like Facebook, Twitter and YouTube. A series of assignments build upon each other toward a final social media marketing plan for a selected consumer product or service. Co-listed with EN.661.453.

**Prerequisite(s):** EN.660.250

**EN.660.455. Building Resilient Communities and Systems. 3 Credits.**

Increasing draught and arid lands, recurring intense storms, rising sea levels, failing infrastructure and architecture – communities are experiencing the effects of new and frequent perils that we must confront, mitigate, manage, predict and prevent. What solutions are we finding? How have communities restructured, innovated with technology and developed policy to minimize damage and risk? What makes for resilient communities and systems? What new options might we consider? This course, taught in seminar style, addresses these and other questions about resiliency through investigation, reading and discussion. Area: Engineering, Natural Sciences

**EN.660.458. Entrepreneurial Opportunities in Sustainable Living. 3 Credits.**

Area: Engineering, Natural Sciences

**EN.660.459. Entrepreneurial Spirits. 3 Credits.**

Have you noticed the growth of consumer-focused, alcohol related enterprises? New wineries, breweries, distilleries and cideries abound in response to continuing growth in customer demand. Have you contemplated starting this type of enterprise? If so, this may be a course for you!!! We explore the background, opportunities and challenges in each of these spirit arenas as we investigate questions one must answer to make an informed decision about starting or joining such an enterprise. Among the topics we will study are the styles of products, vessels, production processes, costs/returns, sources of raw materials, laws and regulations, marketing options, food pairings, customers and the like. Expect to make several local field trips. Also expect to perform several individual and group assignments, the results of which you will be required to share with classmates.

**EN.660.460. Entrepreneurship. 3 Credits.**

This course provides students with a solid introduction to the entrepreneurial process of creating new businesses. Students will gain an appreciation for the investors' perspective in assessing opportunities, evaluating strategies, and valuing the new enterprise. The course will cover the principal components of building a successful venture including management, market analysis, intellectual property protection, legal and regulatory issues, operations, entrepreneurial financing, and the role of the capital markets. Course work will include case studies and creation of investor marketing materials. Open to Juniors and Seniors. No Audits. Recommended Course Background: EN.660.203

**Prerequisite(s):** EN.660.105 OR EN.660.250

**EN.660.470. Leadership Studies Capstone. 3 Credits.**

The Leadership Studies Capstone provides Leadership Studies minors with the opportunity to design a project for which they will perform a leadership role. Advisors will provide students with guidance throughout the semester. Projects must be defined and presented to the Leadership Studies minor director prior to the start of the student's senior year and approved by the conclusion of the first week of classes. Possible projects include experiential social entrepreneurship, developing an environmental venture, leading educational initiatives, leadership in a JHU-approved student organization, and partnership with a JHU Center, among others. Projects must meet the criteria established in the rubric.

**EN.660.475. Innovation Lab. 3 Credits.**

This course is designed to provide students with the opportunity to explore the commercial opportunities inherent in a business idea that they bring to the class at the outset. For example, this course could be taken in conjunction with Engineering Design courses. Students who do not come with a pre-existing business idea will have the opportunity to join a team. The course focuses on building the skills to validate the business idea by defining a value proposition, analyzing markets and competitors, and designing a pathway to commercialization. As a part of the process, students will learn how to develop a marketing plan, market entry strategies, business and financial models, as well as strategies for addressing intellectual property, licensing, regulatory reimbursement and manufacturing issues. Undergraduates only.

Area: Engineering, Natural Sciences

**EN.660.500. Business Internship. 1 Credit.**

Students may qualify for an internship with one of the many local employers with whom CLE works or they may arrange a non-local internship on their own. For non-paid internships only, students may apply for sponsorship for academic credit through CLE. Applications must include a resume, transcript and written essay and will be evaluated on the basis of work experience, GPA, writing sample, and course work. Students are expected to complete two reports assigned by the internship coordinator. S/U only.

**Prerequisite(s):** You must request Independent Academic Work using the Independent Academic Work form found in Student Self-Service: Registration &gt; Online Forms.

**EN.660.501. Practicum In Entrepreneurship and Management. 3 Credits.**

Students work on an existing business or marketing plan/case project under the close supervision of an Entrepreneurship and Management faculty member. Students must apply by submitting a cover letter, resume, unofficial transcript, and essay describing the business concept/marketing plan. Applications must be approved by both the faculty member and director of CLE. Students are expected to meet regularly with the faculty member and complete assigned readings and projects. Permission required. S/U only.

**Prerequisite(s):** You must request Independent Academic Work using the Independent Academic Work form found in Student Self-Service: Registration &gt; Online Forms.

**EN.660.503. Practicum in Leadership. 1 Credit.**

Students work on an existing leadership plan/case project under the close supervision of an Entrepreneurship and Management faculty member. Students are expected to meet regularly with the faculty member and complete assigned readings and projects. S/U only.

**Prerequisite(s):** You must request Independent Academic Work using the Independent Academic Work form found in Student Self-Service: Registration &gt; Online Forms.

**EN.660.567. Leadership Theory Independent Study. 1 Credit.**

Students will be introduced to the history of Leadership Theory from the 'Great Man' theory of born leaders to Transformational Leadership theory of non-positional learned leadership. Transformational Leadership theory postulates that leadership can be learned and enhanced. The course will explore the knowledge base and skills necessary to be an effective leader in a variety of settings. Students will assess their personal leadership qualities and develop a plan to enhance their leadership potential. Recommended Course Background: EN.660.105 or EN.660.220/EN.660.340. No audits.

**Prerequisite(s):** You must request Independent Academic Work using the Independent Academic Work form found in Student Self-Service: Registration &gt; Online Forms.

**EN.660.594. Business Internship-Summer. 1 Credit.**

**Prerequisite(s):** You must request Independent Academic Work using the Independent Academic Work form found in Student Self-Service: Registration &gt; Online Forms.

**EN.660.604. Business of Bioengineering Innovation & Design I. 3 Credits.**

This course comprises two distinct, but related, components. The first is a broad introduction to the terms, concepts, and values of business and management. Particular emphasis will be placed on the economic, financial, and corporate contexts of our business culture, and how they impact the organization, strategy, and decision-making of business firms. The second component is an introduction to the sociological and economic forces that shape the development and diffusion of new technologies. This part is primarily designed to provide a framework for determining the commercial viability of new medical devices and the best path for realizing their value, including how to develop a compelling value proposition, analyze markets and competitors, and protect intellectual property. Throughout, the course utilizes individual exercises, case analyses, and team projects. CBID MSE Students Only

**EN.660.655. Building Resilient Communities and Systems. 3 Credits.**

Increasing draught and arid lands, recurring intense storms, rising sea levels, failing infrastructure and architecture – communities are experiencing the effects of new and frequent perils that we must confront, mitigate, manage, predict and prevent. What solutions are we finding? How have communities restructured, innovated with technology and developed policy to minimize damage and risk? What makes for resilient communities and systems? What new options might we consider? This course, taught in seminar style, addresses these and other questions about resiliency through investigation, reading and discussion. Area: Engineering, Natural Sciences

**EN.660.675. Innovation Lab. 3 Credits.**

This course is designed to provide students with the opportunity to explore the commercial opportunities inherent in a business idea that they bring to the class at the outset. For example, this course could be taken in conjunction with Engineering Design courses. Students who do not come with a pre-existing business idea will have the opportunity to join a team. The course focuses on building the skills to validate the business idea by defining a value proposition, analyzing markets and competitors, and designing a pathway to commercialization. As a part of the process, students will learn how to develop a marketing plan, market entry strategies, business and financial models, as well as strategies for addressing intellectual property, licensing, regulatory reimbursement and manufacturing issues. Graduate Students only. Area: Engineering, Natural Sciences

**EN.661.110. Professional Writing and Communication. 3 Credits.**

This course teaches students to communicate effectively with a wide variety of specialized and non-specialized audiences. Projects include production of resumes, cover letters, proposals, instructions, reports, and other relevant documents. Class emphasizes writing clearly and persuasively, creating appropriate visuals, developing oral presentation skills, working in collaborative groups, giving and receiving feedback, and simulating the real world environment in which most communication occurs. Not open to students who have taken EN.661.110 as Technical Communication or Professional Communication for Science, Business and Industry or EN.661.120 Business Communication. No audits.

**Prerequisite(s):** Students may take EN.661.110 or EN.661.120, but not both. Writing Intensive

**EN.661.111. Professional Writing and Communication for International Students. 3 Credits.**

This course teaches ESL students to communicate effectively with a wide variety of specialized and non-specialized audiences and will provide ESL-specific help with grammar, pronunciation, and idiomatic expression in these different contexts. Projects include production of resumes, cover letters, proposals, instructions, reports, and other relevant documents. Class emphasizes writing clearly and persuasively, creating appropriate visuals, developing oral presentation skills, working in collaborative groups, giving and receiving feedback, and simulating the real world environment in which most communication occurs. Note: not open to students who have taken EN.661.110 as Technical Communication or Professional Communication for Science, Business, and Industry or EN.661.120 Business Communication. No audits.

**Prerequisite(s):** Students make take EN.661.111, EN.661.110, or EN.661.120, but not more than one. Writing Intensive

**EN.661.128. Improvisational Techniques for Communication. 3 Credits.**

This course can help you learn how to increase your self-confidence, interpersonal skills, emotional intelligence, and personal effectiveness in a wide variety of social settings—both academic and professional. Using scenarios that encourage creative problem solving, collaboration, imaginative movement, radical acceptance, and deep play, this course can help you be more effective in whatever it is you want to do. This course is appropriate for students in any discipline or major.

**EN.661.129. Improv for Entrepreneurs and Leaders. 3 Credits.**

Improv is about finding the fullest potential in what is readily available. In fact, all 7 billion people on this planet improvise every single day, but only a few of us improvise well. It's imperative that tomorrow's leaders and entrepreneurs navigate and adapt to our changing world with extemporaneous finesse. To achieve such outcomes this class takes the theory behind theatrical improv, and applies it to the everyday, fostering communication and collaboration ideal for the work environment, where such skills are often overlooked in favor of the purely technical. Designed for students without any acting experience, there are no prerequisites to participate. This class will push the boundaries of your thought, facilitate greater awareness and expose you to powerful creative tools to enhance your professional and entrepreneurial success.

**EN.661.250. Oral Presentations. 3 Credits.**

This course is designed to help students push through any anxieties about public speaking by immersing them in a practice-intensive environment. They learn how to speak with confidence in a variety of formats and venues - Including extemporaneous speaking, job interviewing, leading a discussion, presenting a technical speech, and other relevant scenarios. Students learn how to develop effective slides that capture the main point with ease and clarity, hone their message, improve their delivery skills, and write thought-provoking, well-organized speeches that hold an audience's attention. No audits. Not open to students that have taken EN.661.150.

**Prerequisite(s):** Students may take EN.661.250 or EN.661.150, but not both. Writing Intensive

**EN.661.251. Oral Presentations for International Students. 3 Credits.**

This course is designed to help students push through any anxieties about public speaking by immersing them in a practice-intensive environment. They learn how to speak with confidence in a variety of formats and venues - Including extemporaneous speaking, job interviewing, leading a discussion, presenting a technical speech, and other relevant scenarios. Students learn how to develop effective slides that capture the main point with ease and clarity, hone their message, improve their delivery skills, and write thought-provoking, well-organized speeches that hold an audience's attention. Special attention will be placed on diction, pronunciation, tone, pace and emphasis of language. Additional attention also will be given to syntax as well as non-verbal communication patterns. No audits. Not open to students that have taken EN.661.151

**Prerequisite(s):** Students may take EN.661.251 or EN.661.151, but not both.

Writing Intensive

**EN.661.271. Communicating as Scientists and Engineers. 3 Credits.**

This course explores how to effectively communicate technical subjects to diverse audiences. Students will engage scientific and engineering communications from multiple genres, including popular articles, long form journalism, fiction, technical reports, and TED Talks, to analyze what makes technical communication successful. In addition to honing their communication skills through writing assignments, response papers, and brief presentations, students will apply what they've learned by writing a scientific or engineering article and delivering a technical presentation based on their area of study.

Writing Intensive

**EN.661.301. Writing for the Law. 3 Credits.**

This course teaches students to communicate effectively in various modes of legal discourse that are fundamental to the practice of law. Students will engage in writing nearly every session and will learn the basics of legal writing, editing (both the student's and others' work), and written/oral advocacy skills. Students can expect to work with litigation-related documents such as pleadings, preliminary and dispositive motions, and appellate briefs as well as non-litigation-related documents such as opinion articles, publications, essays, and various business-related contracts.

Writing Intensive

**EN.661.306. Special Topics in Professional Writing: Freelance Travel Writing. 3 Credits.**

In this course, students will learn the fundamentals of magazine and travel writing as well as best practices for working as a freelance writer. After gaining familiarity with the genre by reading several "classics" of travel writing and a selection of exemplary magazine articles, students will learn how to brainstorm ideas, plan research, interview skillfully, take useable photos with smartphones, polish pitches to editors, and write/revise/submit work for publication. Students will use Washington, DC, and Baltimore as the basis for most of our work but can also choose to travel farther afield. At the end of the course, students will create an ePortfolio to showcase their articles, profiles, reviews, trade placements, blog entries, and pitches/queries to potential editors. Recommended: one prior writing course.

Writing Intensive

**EN.661.315. Culture of the Engineering Profession. 3 Credits.**

This course focuses on building understanding of the culture of engineering while preparing students to communicate effectively with the various audiences with whom engineers interact. Working from a base of contemporary science writing (monographs, non-fiction, popular literature and fiction), students will engage in discussion, argument, case study and project work to investigate: the engineering culture and challenges to that culture, the impacts of engineering solutions on society, the ethical guidelines for the profession, and the ways engineering information is conveyed to the range of audiences for whom the information is critical. Additionally, students will master many of the techniques critical to successful communication within the engineering culture through a series of short papers and presentations associated with analysis of the writings and cases. No audits. WSE juniors and seniors or by instructor approval.

Area: Social and Behavioral Sciences

Writing Intensive

**EN.661.316. Culture of the Media Profession. 3 Credits.**

This course focuses on building understanding of the culture of the media and publishing professions while preparing students to communicate effectively within it. Working from a base of contemporary writing on professions in media, students will engage in discussion, argument, and project work to investigate the culture of media and challenges to that culture, the impacts of media on society, and the ethical guidelines for the profession. Additionally, students will master many of the techniques of critical media production, editing, and publication through a series of short papers and presentations. Students must have previously taken a writing intensive course.

Area: Engineering, Natural Sciences

Writing Intensive

**EN.661.317. Culture of the Medical Profession. 3 Credits.**

This course is designed to engage students in thinking critically and empathetically about key issues encountered by healthcare professionals. The course, taught in seminar style, explores topics ranging from health disparities and healthcare costs to provider-patient communication and socioeconomics of health care by examining cases and readings that highlight the problems that doctors, administrators, researchers, nurses, and other healthcare professionals face on a daily basis. Guest speakers with a range of clinical backgrounds from physicians to social workers also come to class in order to share their path into medicine and daily life as a medical professional. Course content is focused around three specific course goals: 1) teaching students to consider the culture of the medical profession in general as well as the culture of specific institutions and therapeutic areas; 2) equipping students with the framework to understand health care from diverse socioeconomic and cultural contexts; and 3) providing students opportunities to exercise the communication skills required in healthcare settings.

Area: Social and Behavioral Sciences

Writing Intensive

**EN.661.329. Improv for Science, Technology and Industry. 3 Credits.**

Building on the foundational course, Improvisational Techniques for Communication, Advanced Improv uses more complex scenarios to allow students to deepen and refine the skills they have already learned. Using scenarios that encourage creative problem solving, collaboration, imaginative movement, radical acceptance, and deep play, this course helps students to speak and interact more fluidly, spontaneously, and authentically in a wide variety of social settings. This course is only open to students who have taken Improvisation Techniques XYZ or by instructor permission.

**Prerequisite(s):** EN.661.128 OR EN.661.129 OR EN.661.250 OR AS.225.346

**EN.661.355. Special Topics in Professional Writing: Blogging about Food and Culture. 3 Credits.**

Explore Baltimore's thriving food and restaurant scene while learning the art of criticism and best practices for blogging. In this journalism class taught by former New York Times Magazine editor Sarah Smith, students will study the work of some of the best writers in the field, from Laurie Colwin to Pete Wells, and using that work as a guide, write their own essays, reviews and features, which the class will discuss in a workshop setting. Instruction will include the basics of reporting and research; differences in writing for print and online media; ethics and legal concerns; and practical advice for pitching editors and setting up blogs. Recommended Course Background: At least one previous writing course.

Writing Intensive

**EN.661.360. Marketing Your Start-up. 3 Credits.**

This course provides students who have an enterprise or business idea with a road map for developing a complete marketing plan for their venture. From conducting industry and competitor analyses to formulating a marketing program with corresponding projections, students will have developed a professional marketing plan upon the conclusion of the course. Lecture content will be supplemented by guest speaker presentations by local entrepreneurs and marketing practitioners.

**Prerequisite(s):** EN.660.250 OR EN.660.105

**EN.661.361. P.R. & Media. 3 Credits.**

This course focuses on the ways that organizations, both for-profit and non-profit, manage their communications to deliver strategic, coherent and compelling messages to their varied stakeholders. Using case studies and team-based, real world projects, we will explore topics including public and media relations, corporate image, branding, advertising, internal and external communications, crisis management, investor relations, ethics and social responsibility. In the process, we will consider issues ranging from organizational culture and leadership styles to defining strategy, managing conflict, defending positions and disagreeing agreeably. No audits. Recommended Course Background:

AS.220.105, EN.661.110, AS.060.113 or AS.060.114, AS.060.215, EN.660.250, EN.660.105, and EN.661.250

Writing Intensive

**EN.661.370. Storytelling with Data. 3 Credits.**

Humans have used stories as a compelling way to share knowledge since the beginning of time. In the 21st century, information is being created at an astounding rate and we seek to analyze and communicate this new knowledge. Stories about public health statistics, economic indicators, and societal/cultural trends have become increasingly common and urgent in news cycles. Other uses of communicating data can help to influence policy discussions or promote future research funding. In this course, you will learn techniques and methods for displaying data and telling the accurate story your data has to say. You will also learn a number of design principles necessary for creating compelling and beautiful data visualizations and presentations. Although the course is not tool-specific, students will gain experience working with MS Excel and Tableau. No programming experience is necessary. Students may choose to work with their own dataset or, if they have none, will be given one by the instructor.

**EN.661.380. Business Analytics. 3 Credits.**

In this course students learn the procedures and processes that researchers use to determine answers to questions such as how to price a product, how to differentiate one product from another, and how to evaluate customer response to an offering. The materials combine fundamentals of research design with statistics procedures to answer the questions that entrepreneurs and marketing managers must answer as they write business plans, develop their product mix, set prices, create advertising and test products. The course combines case study, simulated situations, lecture, discussion and real-time projects to produce answers using the techniques, tools and procedures typically used in North American enterprises.

Area: Quantitative and Mathematical Sciences

**EN.661.453. Social Media and Marketing. 3 Credits.**

This course explores strategies for monitoring and engaging consumers in digital media. Students will gain practical knowledge about developing, implementing and measuring social media marketing campaigns. They will learn how to analyze what consumers are saying and connect with them by leveraging word of mouth, viral and buzz marketing through sites like Facebook, Twitter and YouTube. A series of assignments build upon each other toward a final social media marketing plan for a selected consumer product or service. Co-listed with EN.660.453. No audits.

Writing Intensive

**EN.661.454. Blogging and Digital Copywriting. 3 Credits.**

Learn how to develop, write and manage content for marketing communication on the Web and build an online presence through search engine optimization (SEO) and search engine marketing (SEM). Each student will create his/her own professional WordPress blog and gain knowledge on how to market it. They will also learn copywriting for various digital formats including Email marketing, website copy and social media while gaining an understanding of web analytics, conversion optimization, writing for keywords and mobile marketing. Recommended Course Background: one writing course in any discipline (professional communication, expository writing, or writing seminars). No audits.

Writing Intensive

**EN.661.610. Research Writing for International Students. 3 Credits.**

This course is designed to help ESL writers succeed in writing, editing, and completing a large research project specific to their discipline. This could be a research report, journal article, literature review, dissertation chapter, grant proposal, or other relevant document. The course provided intensive help with grammar, idiomatic phrasing, and overall clarity for writers whose native language is not English. The course includes both individual consultation and group workshops. P/F grading only (students may elect to take this course for a traditional letter grade if their departments require them to do so; students must inform the instructor by the second week of class). No audits.

Writing Intensive

**EN.661.630. Improving Writing and Communication Skills for Scientists and Engineers. 3 Credits.**

This course is designed to help engineers and scientists improve their communication skills in an immersive, practice-intensive environment that includes simulation in a wide variety of scenarios, formats, and venues. Throughout the semester, students will work on polishing a journal article or dissertation chapter. Simultaneously, students will learn how to translate that same material to use in a variety of public speaking modalities—job interviewing, department talks, networking sessions, spontaneous “elevator pitch” opportunities, and other relevant scenarios. The course emphasizes developing clarity, becoming more emotionally intelligent, honing a main message, developing effective slides, improving delivery skills and confidence, and translating technical expertise to a wide variety of audiences. No audits allowed.

Writing Intensive

**EN.661.713. Advanced Communication for International Students: Applied Mathematics and Statistics Masters. 1.5 Credits.**

This course is designed to help only those international students studying in a special cohort toward a Master’s Degree in Applied Math and Statistics. It teaches advanced ESL students to communicate more effectively with a wide variety of specialized and non-specialized audiences in a professional setting with ESL-specific intensive help in grammar, pronunciation, idiomatic phrasing, and overall clarity for students whose native language is not English. Projects include meet-and-greets, effective e-mails, memos, resumes, cover letters, reports, oral presentations, and building an overall comfort level with oral communication in English. Class emphasizes writing clearly and persuasively, creating appropriate visuals, developing oral presentation skills, working in collaborative groups, giving and receiving feedback, and simulating real world environments in which most communication occurs. P/F grading only.

**EN.662.611. Strategies: Accounting & Finance. 3 Credits.**

Because accounting is described as the language of business, this course emphasizes the vocabulary, methods, and processes by which all business transactions are communicated. The accounting cycle, basic business transactions, internal controls, and preparation and understanding of financial statements are covered. Financial performance is assessed using ratio analysis; valuations are calculated using discounted cash flow models; and the course content is integrated with the Strategies for Innovation and Growth (EN.662.692) curriculum in a comprehensive end-of-semester project. Open only to students in the Masters of Science in Engineering Management program.

**EN.662.642. Leadership & Management. 3 Credits.**

Management and Leadership is a case, experiential and research based course intended to introduce participants to issues and solutions related to growing and managing businesses with an emphasis on entrepreneurial enterprises. The course focuses on managerial decision-making and organization building through topics that include planning and managing strategic change; finding competitive advantage; making informed decisions; dealing with uncertainty; negotiating collaborative settlements; managing/leading projects, teams and professionals; networking and forming strategic alliances; valuing differences; creating and maintaining organizational cultures; and devising performance measures. Additionally, participants master aspects of management communication as they address course content. For CBID Students only. Area: Engineering, Natural Sciences

**EN.662.670. Special Projects in International Consulting. 3 Credits.**

Organizational strategy is fundamentally about identifying and solving the problems that prevent an organization from moving forward, from realizing its goals. In the age of Covid-19, the question of industry resilience is a pressing one. Crisis conditions have forced organizations and entire industries to adapt in unforeseen ways. This course will engage students in working with real clients searching for strategic solutions for these newly emerging issues. Students will work in teams with real clients, learn how to do primary research and use design thinking to create value for our client partners. At the end of the term, student teams will formally present their solutions to the client partner. Area: Engineering, Natural Sciences

**EN.662.692. Strategies for Innovation & Growth. 3 Credits.**

The course is organized into two interconnected parts: innovation and growth, which, together, form the foundation of successful businesses. After successfully completing the course, students should know how to critically analyze businesses and apply an engineering-based thought process to more qualitative problems, as well as understand the elements that can make a company successful. This course will overlap heavily with “Strategies: Accounting and Finance”, and several assignments will require in-depth understanding of the material from that course. MSEM students only.

**EN.662.802. MSEM Internship. 3 Credits.**

MSEM Internship for 3 credits in the management portion of the MSEM program.

**EN.662.811. M.S. in Engineering Management Seminar. 0.5 Credits.**

Professional development seminar for engineering management students featuring outside speakers with engineering management experience. For M.S. in Engineering Management only; P/F only; no audits.

**EN.662.812. MSEM Seminar. 1 Credit.**

Professional development seminar for engineering management students featuring outside speakers with engineering management experience. For M.S. in Engineering Management only; P/F only; no audits.

**EN.663.453. Innovation and Business Design. 3 Credits.**

This two-semester course in innovation and entrepreneurship is designed to give students the requisite skills to generate and screen ideas for new venture creation and then prepare the business plan for an innovative technology of their own design. The curriculum will focus on the ability of students to identify market needs, validate those needs, develop appropriate solutions and construct the business case. Students will form multi-disciplinary teams to explore specific market spaces, usually provided by outside sponsors. The first semester will focus on identifying problems worth solving. During the second semester, teams will 1) select one problem, 2) design and build the solution to that problem, 3) identify the inherent commercial opportunities, and 4) formulate the business plan.

Area: Engineering, Natural Sciences

**EN.663.457. Innovation and Business Design II. 3 Credits.**

This two-semester course in innovation and entrepreneurship is designed to give students the requisite skills to generate and screen ideas for new venture creation and then prepare the business plan for an innovative technology of their own design. The curriculum will focus on the ability of students to identify market needs, validate those needs, develop appropriate solutions, and construct the business case. Students will form multi-disciplinary teams to explore specific market spaces, usually provided by outside sponsors. The first semester will focus on identifying problems worth solving. During the second semester, teams will 1) select one problem, 2) design and build the solution to that problem, 3) identify the inherent commercial opportunities, and 4) formulate the business plan.

**Prerequisite(s):** EN.663.453

Area: Engineering, Natural Sciences

**EN.663.458. Brewing Science. 1.5 Credits.**

Micro-breweries, the fastest growing segment of the manufacturing sector in the US, is an enterprise opportunity for students who are fascinated by fermentation. The class addresses the fundamentals of the science and the manufacturing processes together with enterprise considerations of identifying customers, locations and finances.

Area: Engineering, Natural Sciences

**EN.663.600. Ethical Decision-making in Business and Science. 1.5 Credits.**

This course introduces the student to concepts relevant to resolving ethical issues in business, science, and society. Students will learn ethical reasoning skills and frameworks to aid decision-making and to discuss ethical questions with their leaders, whether in a business, consulting or engineering firm, a science lab, or the communities within which they live and work.

**EN.663.615. Building Effective Posters and Slides. 1.5 Credits.**

This course teaches techniques in visual communication geared to suit emerging scientists. Students will learn the fundamentals of visual design, including theories of form, color and visual perception. The course will cover principles of typography, grid systems and other methods of establishing visual hierarchy. There will also be a short unit on commercial photography. Students will put this knowledge to work in the classroom to produce slides, conference posters and data visualizations. Grading: P/F or for letter grades.

**EN.663.617. Storytelling with Data. 1.5 Credits.**

This course explores the process of developing compelling visual stories based on data and information. Students will learn to edit, contextualize, sequence and compare data more effectively. They will also learn to use visual design tools to clarify the message they wish to convey about their data. Topics will include design thinking, visual perception, design theory, color theory, spatial relationships, pattern recognition, page layout, and basic probability and statistic concepts commonly used in the visualization process.

**EN.663.618. Professional Presentations. 3 Credits.**

This course is designed to help scientists and engineers improve their oral presentation skills in a practice-intensive environment. Students will learn how to hone their message, to craft presentations that address both technical and non-technical audiences, and create clear, compelling PowerPoint presentations. All presentations will be recorded for self-evaluation, and students will receive extensive instructor and peer feedback. MSEM students only. Not open to undergraduates.

**EN.663.622. Professional Presentations for Graduate Students. 3 Credits.**

This course is designed to help scientists and engineers improve their oral presentation skills in a practice-intensive environment. Students will learn how to hone their message, to craft presentations that address both technical and non-technical audiences, and create clear, compelling PowerPoint presentations. All presentations will be recorded for self-evaluation, and students will receive extensive instructor and peer feedback. Not open to Undergraduates.

**EN.663.623. Professional Writing and Communication for International Students: Applied Mathematics and Statistics Masters. 3 Credits.**

This course will prepare you to be competitive in the world of business by offering you some of the oral and written communication techniques you need to be successful. While working to enhance pronunciation, grammar, idiomatic expressions, and business vocabulary, you will work to speak comfortably in business social settings and meetings and to write effectively in a variety of modes not limited to e-mails, memoranda, resumes, and summary reports. The overall goal for all assignments is to speak and to write in clear, effective English. Moreover, improving oral and written communications will give you confidence, help you to make a good impression, and just maybe give you that "edge" you need to get the job you want or the project you desire once employed. Finally, individual pronunciation conferences will be scheduled with each of you throughout the semester. Applied Mathematics and Statistics Masters students only. P/F only

**EN.663.624. Advanced Communication for International Students: Applied Mathematics and Statistics Masters. 1.5 Credits.**

This course is designed to help only those international students studying in a special cohort toward a Master's Degree in Financial Math. It teaches advanced ESL students to communicate more effectively with a wide variety of specialized and non-specialized audiences in a professional setting with ESL-specific intensive help in grammar, pronunciation, idiomatic phrasing, and overall clarity for students whose native language is not English. Projects include meet-and-greets, effective e-mails, memos, resumes, cover letters, reports, oral presentations, and building an overall comfort level with oral communication in English. Class emphasizes writing clearly and persuasively, creating appropriate visuals, developing oral presentation skills, working in collaborative groups, giving and receiving feedback, and simulating real world environments in which most communication occurs. P/F grading only.

**EN.663.626. Improvisation for Enhanced Teamwork and Communication. 1.5 Credits.**

Following the lead of innovative communities and businesses, this course turns to improvisation techniques to develop communication skills, encourage creative problem solving, and support teamwork. Designed for students without any acting experience, there are no prerequisites to participate. In a non-threatening, judgment-free atmosphere, we begin with improv fundamentals to help students master the subtleties of communication through voice, expression, and body language. As students experiment with imaginative movement and play, they learn to respond spontaneously and confidently to unforeseen challenges. Working together in pairs and small groups, students build trust and operate as fluid and dynamic team members. Throughout the course students build skills to minimize stress, overcome rejection, find comfort in fear, unleash creativity, and trust in their ability to communicate effectively.

**EN.663.630. Business Creation and Contracts. 1.5 Credits.**

Introduces participants to the fundamental aspects of law associated with developing and bringing new products to the marketplace. Arranged in modules and taught largely through the case method, the course features the following topics: creating and forming businesses and contracts. GRADING: P/F for most students; letter grades for MSEM students.

**EN.663.631. Intellectual Property Law. 1.5 Credits.**

Arranged in modules and taught largely through the case method, the course features the following topics: intellectual property; principal-agent relations; and product liability. Not only will participants learn the principles associated with each topic, but also they will master the questions and concerns to use when working with legal counsel on these issues in the future. GRADING: P/F for most students; letter grades for MSEM students.

**EN.663.633. Regulatory Writing. 1.5 Credits.**

Regulatory writing explores the preparation of clinical documents throughout the life cycle of a (potential) treatment, starting with describing and reporting data from clinical trials, through preparing regulatory submission documents. Clinical documents to be discussed include clinical trial protocols, clinical trial informed consents (ICFs), investigator brochures (IBs), and clinical study reports (CSRs) among others. Essential skills for creating clear and readable documents including basic grammar and usage as well as sentence structure will also be reviewed.

**EN.663.634. Improvisation for Communication. 1.5 Credits.**

Have you ever botched a job interview? Do you suffer from socially-induced shyness at networking receptions? This class can help! Using techniques rooted in the principles of improvisation and acting, this course can help you learn how to increase your self-confidence, interpersonal skills, emotional intelligence, and personal effectiveness in a wide variety of social settings—both academic and professional. Using scenarios that encourage creative problem solving, collaboration, imaginative movement, radical acceptance, and deep play, this course can help you be more effective in whatever it is you want to do. This course is appropriate for students in any discipline or major.

**EN.663.640. Writing Grant and Contract Proposals. 1.5 Credits.**

Almost regardless of professional setting, proposals are used to secure work. They are the basis of funding in consulting, academic research, many social enterprises, business-to-business commerce, and government contracting. They require huge amounts of time and energy, yet success is far from guaranteed. In this module, you will master some of the techniques required for proposal writing success. Among the topics addressed are funding sources, writing skills that work, required content for all proposals, creating one voice in shared documents, dealing with “best-and-final negotiations and other important topics. Expect to complete several writing assignments for class including at least part of your own proposal.

**EN.663.641. Improving Presentation Skills for International Students. 1.5 Credits.**

This course is designed to help scientists and engineers who are non-native English speakers improve their oral presentation skills in a practice-intensive environment. Students will learn how to hone their message, to craft presentations that address both technical and non-technical audiences, and create clear, compelling PowerPoint presentations. All presentations will be recorded.

**EN.663.643. Science Outreach: Communicating Science to the Public. 1.5 Credits.**

This course teaches students to communicate effectively with a non-specialized audience including the “voting public”, teachers and high school students. Class projects include developing materials for mainstream science news outlet and a hands-on presentation. Class content emphasizes writing clearly for a non-technical audience, creating appropriate visuals and hands-on manipulatives, developing oral presentation skills, giving and receiving feedback, and simulating the real world environment in which most communication occurs. This is a 7-week course and is not open to undergraduates.

**EN.663.644. Writing for Clarity. 1.5 Credits.**

In this course, you will become familiar with the basic concepts, strategies, and quantitative techniques of personal financial planning. This course covers the essential aspects of financial education, beginning with a discussion of factors that influence spending decisions/choices, budgeting and the time value of money and moves on to the basic principles of financial planning in the areas of consumer credit, housing decisions, taxation, insurance, investing fundamentals and retirement planning. Graduate students only.

**EN.663.645. Improving Presentation Skills for Scientists and Engineers. 1.5 Credits.**

This course is designed to help scientists and engineers improve their oral presentation skills in a practice-intensive environment. Students will learn how to hone their message, to craft presentations that address both technical and non-technical audiences, and create clear, compelling PowerPoint presentations. All presentations will be recorded for self-evaluation, and students will receive extensive instructor and peer feedback. Graduate students only. This is a 7-week course and is not open to undergraduates.

**EN.663.648. Introduction to Dissertation Writing. 1.5 Credits.**

This course is designed to help students in any discipline and in any phase of the dissertation process move their work forward. Whether you are a beginning student who has no idea what your topic is or an advanced student facing the submission process in a few months, you will be able to use this workshop to help you focus your efforts more effectively and find out best practices for doing dissertation writing here at JHU. PhD students only.

Area: Engineering, Natural Sciences

**EN.663.649. Continuing Dissertation Writing Workshop. 1.5 Credits.**

This workshop provides continuing dissertation writers with the structure of a traditional classroom environment to help facilitate work on the dissertation and to provide a framework of personal accountability in meeting personal writing goals. This course is only open to students who have taken EN.663.648 Introduction to Dissertation Writing. PhD students only.

**Prerequisite(s):** EN.663.648

Area: Engineering, Natural Sciences

**EN.663.651. The Entrepreneurial Cycle and Developing Effective Business Plans. 1.5 Credits.**

So you have an idea for a business – now what? How do you convert your idea to a plan? What factors must you consider and how should you do that? How do you think about customers and competition? How much money do you need and where can you find it? How do you pitch your idea for maximum impact? Answers to these questions and more are the topics of concern for this module. Expect to build at least several sections of a business plan for your idea with the time period of the class. Graduate students only.

**EN.663.652. Emotional and Cultural Competency. 1.5 Credits.**

We live in increasingly diverse society and an increasingly connected world. Times require new skills and awareness; “smarts” as defined by IQ is no longer sufficient for success. Instead, an understanding of other cultures, a willingness to explore the positions of various stakeholders in situations, the capacity and willingness to exercise empathy, and the ability to identify and work with the feelings of self and others are keys to successful participation in the workforce. This Module addresses these skills in theoretical and practical ways so as to expand the awareness and capacities of participants.

**EN.663.653. Innovation and Business Design. 3 Credits.**

This two-semester course in innovation and entrepreneurship is designed to give students the requisite skills to generate and screen ideas for new venture creation and then prepare the business plan for an innovative technology of their own design. The curriculum will focus on the ability of students to identify market needs, validate those needs, develop appropriate solutions and construct the business case. Students will form multi-disciplinary teams to explore specific market spaces, usually provided by outside sponsors. The first semester will focus on identifying problems worth solving. During the second semester, teams will 1) select one problem, 2) design and build the solution to that problem, 3) identify the inherent commercial opportunities, and 4) formulate the business plan.

**EN.663.654. Commercializing Your Invention or Idea. 1.5 Credits.**

It is one thing to have an idea and quite another to move the idea from idea and basic research to use in the world of business or manufacturing. This course addresses the process and skills required to make that transition. Among the topics addressed in this class are the following: recognizing the potential of ideas, addressing the patent landscape, understanding markets, determining resource requirements, design and prototypes, and finding financing. Graduate and Post Doc Only.

**EN.663.657. Innovation and Business Design II. 3 Credits.**

This two-semester course in innovation and entrepreneurship is designed to give students the requisite skills to generate and screen ideas for new venture creation and then prepare the business plan for an innovative technology of their own design. The curriculum will focus on the ability of students to identify market needs, validate those needs, develop appropriate solutions, and construct the business case. Students will form multi-disciplinary teams to explore specific market spaces, usually provided by outside sponsors. The first semester will focus on identifying problems worth solving. During the second semester, teams will 1) select one problem, 2) design and build the solution to that problem, 3) identify the inherent commercial opportunities, and 4) formulate the business plan.

**Prerequisite(s):** EN.663.653

**EN.663.660. Managing People and Resolving Conflicts. 1.5 Credits.**

Have you ever had to deal with a difficult person at work or in the lab? Have you been a member of a team on which team dysfunction was so bad that it makes television sitcoms look normal? Why are some companies much more productive and pleasant to work with than others? Do you understand techniques of persuasion and how to participate effectively in negotiations? These topics are among the ideas we develop and practice in this class, using a combination of seminar style reading and discussion, lecture and in-class activity. Graduate students only.

**Prerequisite(s):** Students may take EN.663.660 or EN.663.663, but not both.

Area: Engineering, Natural Sciences

**EN.663.664. Marketing Strategies. 1.5 Credits.**

This course, designed for students who have no prior instruction or experience in marketing, provides students with the opportunity to develop skills in formulating, implementing, and controlling a strategic marketing program (including sales and profit forecasts) for a given product-market entry. Using a structured approach to case analysis, students will learn how to make the kinds of strategic marketing decisions that will have a long-term impact on the organization. Through textbook readings, students will learn how to identify appropriate marketing strategies for new, growth, mature, and declining markets and apply these strategies as they analyze a series of marketing cases. The supplementary readings, from a broad spectrum of business periodicals, are more applied and will allow students to see how firms are addressing contemporary marketing challenges. And, one or more guest speakers from different functional areas of marketing, will be invited to speak to the class. In addition to analyzing cases individually, each student will be part of a team that studies a case during the latter half of the semester, developing marketing strategy recommendations with corresponding financials and presenting them to the class.

**EN.663.666. Managing Personal Finances. 1.5 Credits.**

The class in Managing Personal Finance is designed to familiarize the student with the basic concepts and quantitative techniques of personal financial planning and financial literacy. The course begins with a discussion of budgeting and the time value of money and moves on to the basic principles of financial planning in the areas of taxation, consumer credit, housing decisions, insurance, investing fundamentals and retirement planning. Graduate students only. No undergrads.

**EN.663.667. Decision Analytics Fundamentals. 1.5 Credits.**

This course engages students to make better decisions using data and analytical models. Content focuses on analytical reasoning, logic, preparing/managing data bases, designing quantitative models and visualizing data. Three types of quantitative models - clustering, linear regression, and logistic regression - are emphasized. Students are required to use Microsoft Excel (the course does not teach Excel, so prior experience with Excel will be helpful). Throughout the course each concept is taught using case studies.

**EN.663.668. Brewing Science. 1.5 Credits.**

Micro-breweries, the fastest growing segment of the manufacturing sector in the US, is an enterprise opportunity for students who are fascinated by fermentation. The class addresses the fundamentals of the science and the manufacturing processes together with enterprise considerations of identifying customers, locations and finances.

**EN.663.670. Project Management. 1.5 Credits.**

Projects are temporary activities devised to achieve very specific goals in a designated timeframe for a specified amount of resources. Often they involve disparate activities, frequently separated by distance and sometimes involving different staff and materials. For the project to successfully meet its objectives, all these items must be planned, coordinated and orchestrated. This module explores the processes and tools available to those who must manage projects to optimize outcomes within the primary constraints of time, quality, scope and budget. Class time involves presentations, examples and discussion.

**EN.663.671. Leading Change. 1.5 Credits.**

Change happens, like it or not!! It is necessary for progress and the result of innovation, yet change makes individuals and organizations so uncomfortable that most people and groups within organizations vigorously resist change. So the questions become how to cause, how to embrace and how to lead constructive change in our selves, our organizations and our communities – in ways that colleagues and would-be colleagues support and contribute toward success. The primary format for learning in this course is seminar style with reading, researching and sharing of information as well as structured, experiential activities designed to build skills through practice and interpersonal exchange. Class time is devoted to discussion, observation, feedback, additional exercises and presentation. Additionally, participants engage in reflection and explanation of their considerations as the course progresses. GRADING: P/F for most students; letter grades for MSEM students. No undergraduates allowed except enrolled MSEM combined bachelor's/master's students.

**EN.663.672. Management and Technology Consulting. 1.5 Credits.**

Management consulting, an American innovation in organizational development, now has world-wide practice and effects. Almost every business sector— including private, governmental and NGO's— employs consultants. Consultants must be able to effectively frame problems, understand their context, generate solutions, and protect the client and stakeholders, as well as work in a team environment and deliver a quality product. This class addresses the fundamental skills and expectations of working in this profession through a combination of lecture, discussion and exercise.

**EN.663.673. Leading Teams in Virtual, International and Local Settings. 1.5 Credits.**

Team-based leadership takes place in many different groups. Basic principles related to all contexts will be discussed. The nuances of leading in teams in different environments including face to face, virtual teams such as Skype, Google Chat, etc., and culturally different/global teams will be explored and practiced. The class environment will be discussion, team and practically based. The primary format for learning in this course is seminar style with reading, researching and sharing of information as well as structured, experiential activities designed to build skills through practice and interpersonal exchange. Class time is devoted to discussion, observation, feedback, additional exercises and presentation. Additionally, participants engage in reflection and explanation of their consideration as the course progresses. Further, participants read several texts and articles as well as perform extensive research in preparation for assignments.

Area: Engineering, Natural Sciences

**EN.663.674. Fundamentals of Management. 3 Credits.**

Managers must juggle knowledge of and tasks associated with operations, finance, information technology, strategy, and projects. Much of managerial success, however, depends less on managers' direct input – the sweat of their brows– than on their ability to enlist the active involvement of others: direct reports, other managers, other team members, and those above them on the organizational chart. It is imperative that managers be adept at influencing those over whom they have no formal authority as well as guiding and directing those who report to them. In this course, you will learn and practice the concepts and skills necessary to manage, direct, and guide others as well as content associated with building strategy and structure in organizations.

**EN.663.675. Communicating in a Crisis. 1.5 Credits.**

A crisis is a major occurrence with potentially negative consequences. In Chinese, the word "crisis" means "dangerous opportunity," signifying that an individual or an organization can emerge stronger from a crisis – not without damage but stronger – with the right management and communication deployed effectively to the right audiences in the right channel. In this course, we will explore what managing a crisis well actually means. Who do you need to communicate with? What channels are appropriate? What messaging works for different audiences? Using the case method, live simulations, and real-world examples we will distinguish the factors that create opportunities from crises from those that deepen the danger.

**EN.663.676. Demand Discovery: Finding and Creating Customer****Value. 1.5 Credits.**

Do you love your smartphone? You're not alone. Steve Jobs knew how to design products that customers fell in love with. So did Henry Ford. So why is it so hard? This course focuses on real-world methods of discovering and profitably delivering value to customers. At the heart of any successful business is the identification and profitable satisfaction of unique customer needs. And the ongoing process of identifying, developing, and delivering new value propositions is the basis for continued growth. But this formula can be elusive for new ventures and existing businesses alike. The course presents leading edge methods and techniques to identify sources of opportunity, design new value propositions, and develop profitable and scalable business models—all while reducing venture risk. Developed from techniques used by entrepreneurs and innovative product managers, this course teaches key principles of offering development and innovation, through a combination of readings, case studies, and real-world exercises. The course will involve practical projects for students to identify and design offering concepts, as well as to test and price them. It is designed for students interested in business, entrepreneurship, intrapreneurship, product management, technology management, venture capital, and management consulting.

**EN.663.677. Global Consulting. 1.5 Credits.**

Students partner with research teams at the International Iberian Nanotechnology Laboratory through remote meetings to help transition scientific and engineering concepts from lab to life. Consulting projects cover areas including market and competitor analysis, the identification of consumer locations and demographics, and the development of market entry strategies for innovative products and technologies. Students will learn how to navigate the unique nature of international consulting, paying particular attention to building rapport across cultures and technologies. Deliverables come in the form of proposals, memos, comprehensive reports detailing findings and recommendations, and a slide deck of key findings optimized for remote presentations. Open to juniors and seniors with instructor approval.

Area: Engineering, Natural Sciences