School	Program/Topic Area	Number	Name	Modality	Description	Open to IKNS
Business School	(Business)	B8813	Cross Cultural Seminar (1.5 points)	Online	This course will focus on national (or organizational) culture in the context of your internship or student experience and beyond. In particular, we will investigate how cultures differ along several dimensions, and how you can identify areas of good and bad fit between a previous culture and the culture in which you now work or study. I will present information on how to classify any culture, how cultural attributes influence organizations and work expectations, and how workers can manage the adjustment to the workplace or academy in non-native cultures. The online class lecture (webinar) will provide you a formal way to analyze how you approach work assignments across cultures and managing cross-cultural teams. At our required class meeting we will have a discussion regarding your cross-cultural (e.g., internship or student) experiences, both in general and with a specific focus on cross-cultural challenges. We will also take time to analyze a cross-cultural business case and to view presentations by your fellow students (see section on Grading and Required Assignments).	Instructor permission
Business School	(Decision, Risk & Operations Management)	B6100	Managerial statistics (1.5 points)	Online	Introduces students to basic concepts in probability and statistics of relevance to managerial decision making. Topics include basic data analysis, random variables and probability distributions, sampling distributions, interval estimation, hypothesis testing and regression. Numerous examples are chosen from quality-control applications, finance, marketing and management.	Instructor permission
Business School	(Management)	B8519	Launch your startup	Online	At Columbia Business School, instilling entrepreneurial thinking in our students is part of our mission. Entrepreneurship is fully integrated throughout the MBA curriculum, and now — for the first time ever — we are offering an open-enrollment executive education program on the topic. The eight-week Launch Your Startup (Online) program — comprised of four live and four self-directed modules — offers an intensive learning experience that focuses on the creation, evaluation, development, and launch readiness of a new business or social enterprise. Program participants learn from world-renowned Columbia Business School faculty and tap into the expertise of the University's vibrant entrepreneurial community. Each participant enters the program with a preliminary venture idea that they would like to work on. Using a proprietary sequence of eight modules, the program leverages associated work assignments to support the development of the new venture. Participants learn how to assess the industry and market attractiveness for their venture idea, form competitive strategies, develop minimum viable products and services, prioritize customer acquisition strategies for early traction, and generate full financial statements. Throughout the program, participants refine their venture's hypothesized business model based on instructor, peer, and customer feedback. They leave the program fully equipped with the tools and frameworks required to create and launch their new startup.	Instructor permission
Graduate School of Arts and Sciences	Sociology	UN3675	Organizing innovation	Tba	This course examines major innovations in organizations and asks whether innovation itself can be organized. We study a range of forms of organizing (e.g. bureaucratic, post-bureaucratic, and open architecture network forms) in a broad variety of settings: from fast food franchises to the military-entertainment complex, from airline cockpits to Wall Street trading rooms, from engineering firms to mega-churches, from scientific management at the turn of the twentieth century to collaborative filtering and open source programming at the beginning of the twenty-first. Special attention will be paid to the relationship between organizational forms and new digital technologies.	Instructor permission
Graduate School of Arts and Sciences	Statistics	GR5702	Exploratory Data Analysis and Visualization	Online	This course is covers the following topics: fundamentals of data visualization, layered grammer of graphics, perception of discrete and continuous variables, intreoduction to Mondran, mosaic pots, parallel coordinate plots, introduction to ggobi, linked pots, brushing, dynamic graphics, model visualization, clustering and classification. Prerequisites: programming.	Instructor permission
School of Engineering and Applied Science	Computer Science	W4995	Topics in Computer Science: Data analytics pipeline	Online	“Data analytics pipeline” focuses on the intersection between data science, data engineering, and agile product development. In this course you’ll learn some common data generating processes, how the data is transported to be stored, how analytics and compute capabilities are built on top of that storage, and how production machine learning and modeling platforms can be built in that context. There is a strong focus on good architecture design patterns, and practical implementation considerations that focus on delivering results over building perfect systems	Instructor permission
School of Engineering and Applied Science	Computer Science	W4995	Topics in Computer Science: Elements of Data Science	Online	“Data analytics pipeline” focuses on the intersection between data science, data engineering, and agile product development. In this course you’ll learn some common data generating processes, how the data is transported to be stored, how analytics and compute capabilities are built on top of that storage, and how production machine learning and modeling platforms can be built in that context. There is a strong focus on good architecture design patterns, and practical implementation considerations that focus on delivering results over building perfect systems	Instructor permission

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School of Engineering and Applied Science	Industrial Engineering and Operations Research	E4721	Topics in Quantitative Finance: Big Data in Finance	Online	The vast proliferation of data and increasing technological complexities continue to transform the way industries operate and compete. Over the last two years, 90 percent of the data in the world has been created as a result of the creation of 2.5 quintillion bytes of data on a daily basis. Commonly referred to as big data, this rapid growth and storage creates opportunities for collection, processing and analysis of structured and unstructured data. Financial services, in particular, have widely adopted big data analytics to inform better investment decisions with consistent returns. In conjunction with big data, algorithmic trading uses vast historical data with complex mathematical models to maximize portfolio returns. The continued adoption of big data will inevitably transform the landscape of financial services. However, along with its apparent benefits, significant challenges remain in regards to big data's ability to capture the mounting volume of data. The increasing volume of market data poses a big challenge for financial institutions. Along with vast historical data, banking and capital markets need to actively manage ticker data. Likewise, investment banks and asset management firms use voluminous data to make sound investment decisions. Insurance and retirement firms can access past policy and claims information for active risk management. The course will be a mix of Theory and practice with real big data cases in finance. We will invite guest lecturers mostly for real Big Data Finance Applications. We will give MATLAB, R, or Python examples.	Instructor permission
School of Engineering and Applied Science	Industrial Engineering and Operations Research	E4561	Launch your startup: Tech	Tba	Launch Your Startup focuses on the evaluation, development and potential launch of a new business. Working individually (or on occasion in pairs), students spend the entire term developing an effective and comprehensive presentation of a real business concept by addressing five key issues: in-depth market analysis, product or service design, development of a marketing campaign, assessment of human resource requirements and building a realistic financial forecast. The output will be a comprehensive business plan and a formal presentation of their idea. Students are expected to come with a specific business idea or at least a sincere interest in a particular industry in which they would like to explore the possibility of launching a venture. Projects can be based upon students' own ideas, new technologies from the Columbia Innovation Enterprise or other start-ups that have requested assistance from Columbia MBA students. Industry mentors and a board of directors composed of other class participants provide a reality check as students refine their business opportunity into a written and oral presentation ready to seek funding and commence operations. Faculty members assist in identifying projects, but students are responsible for finding appropriate projects. By the second week of class, all students must have an approved venture project.	Instructor permission
School of Engineering and Applied Science	Industrial Engineering and Operations Research	E4573	Topics in OR: Performance, objectives, and results	Tba	Performance, Objectives - Results Using Data Analytics. This course will cover how to analyze any business. At the core, we are inundated by data today. But not all of it matters. This class will help you formulate Key Performance Indicators (KPIs) and organize them into Objectives and Key Results (OKRs) so that you'll be equipped with the strategic and business acumen to help support a product or business in virtually any situation. Points: 1.5. Fall 2018 term: Financial Decision Models for Engineers is aimed at IEOR students with an interest in financially-oriented applications of foundational IEOR subjects. The course builds on students' knowledge of probability, statistics, simulation, optimization, and large data analytics, as well as the financial material covered Accounting and Finance and IEOR E4003/4403. The course focuses on rigorous analysis and modeling of real-world problems, with an emphasis on understanding modeling assumptions and limitations. The class cycles through a variety of finance-oriented topics and solution methodologies, such as (for example): real options solved with simulation models; optimal project costing and scheduling with random variable (RV) task durations and costs; DCF entity valuations with RV costs, revenues and free cash flows; decision tree evaluation with time value and RV cash flows; and single and multi-period portfolio optimization.	Instructor permission
School of International and Public Affairs	(International Affairs)	U6004	Programming for social impact (1.5 points; workshop)	Tba	In this course, you will learn the fundamentals of programming so you can start writing web applications that can potentially be used in non-profit or public sectors. The course will be very hands-on and you are expected to code during the class. The topics will include - fundamentals of computer science, programming basics, data structures, client-server architecture, javascript, application programming interface, LAMP stack and web frameworks, design tools, scalability issues and infrastructure for application deployment. We will discuss some of these topics in the context of agile development methodology for startups. If you are interested in building a startup as a social entrepreneur, the tools and methods you learn in this course should help you in coding the first prototype of your application. As part of the final project, you are expected to build a fully functional web application. No programming background is required. Students are expected to complete all the reading assignments before the first day of class.	Instructor permission

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School of Professional Studies	Applied Analytics	PS5100	Applied Analytics in the organizational context	Online	The course focuses on data and analytics within operational functions of different kinds of organizations across a range of industry sectors, and the overall ecosystem within which they operate. Students will also learn about the broader context—economic, technological, social, and demographic, and how these trends are influencing the use of analytics. Students learn how data and analytics are used to understand how an organization is currently performing, and how data and analytics can be used to inform future actions to optimize the performance of an organization. The goal is to introduce students to the professional practice of applied analytics, focusing on how analytics can inform a wide range of operational decisions within an organization.	Instructor permission
School of Professional Studies	Applied Analytics	PS5800	Storytelling with data	Online	Data does not have meaning without context and interpretation. Being able to effectively present data analytics in a compelling narrative to a particular audience will differentiate you from others in your field. This course takes students through the lifecycle of an analytical project from a communication perspective. Students develop written, verbal, and visual deliverables for three major audiences: data experts (e.g., head of analytics); consumer and presentation experts (e.g., chief marketing officer); and executive leadership (e.g., chief executive officer). Students get ample practice in strategic interactions in relevant social and professional contexts (e.g., business meetings, team projects, and one-on-one interactions); active listening; strategic storytelling; and creating persuasive professional spoken and written messages, reports, and presentations. Throughout the course, students create and receive feedback on data storytelling while sharpening their ability to communicate complex analytics to technical and nontechnical audiences with clarity, precision, and influence.	Instructor permission
School of Professional Studies	Applied Analytics	PS5400	Managing data	Online	Great managers of analytic projects are more than mere data users; they are key decision makers and strategic owners in the underlying data processes. This course provides students with foundational context for managing data so that it can be leveraged and used with confidence. Analytic teams work closely with technology partners in managing data. Languages and techniques unique to each team can impede cooperation. To bridge this gap, this course provides a broad overview of data technology concepts including database engines and associated technologies. Sound policies and procedures are also essentials to ensure high quality of data throughout the analytics lifecycle. But the challenges of putting these measures into practice are significant. There are often legacy repositories and business functions to unravel, as well as social and political barriers to overcome. Data ownership and accountability are hard to implement. Operational disruption and conflicting stakeholder requirements pose additional barriers. This course will expose students to foundational data principles, governance processes and organizational prerequisites needed to overcome challenges to ensure data quality.	Instructor permission
School of Professional Studies	Applied Analytics	PS5700	Analytics and leading change	Online	The successful implementation of analytics depends not only on developing good insights and good strategy, but is also an exercise in managing the necessary changes. The inspiring stories about the importance of analytics today are about how what was learned through analytics was actually implemented to enable an organization to improve its operations, effectiveness, or return on investment. This course--the third in the sequence of analytics leadership core courses—is about changing the behavior and the culture of organizations, with particular emphasis on how to successfully introduce the methods and results of analytics. Students explore the motivations, obstacles and interventions of change, and learn to build alliances, facilitate difficult meetings and develop a transformation plan. The course focuses on practical skills as they are being developed at organizations with pioneering analytics capabilities today. Students will review some of the most important academic research and business publications on change management and the implementation of analytics. However, the course is also intended to enhance practical skills, so students will engage in some real-world practice and role-playing with classmates. As they master each module, students will incrementally develop a plan to introduce analytics into the organization where you currently work, or have worked, or hope to work.	Instructor permission
School of Professional Studies	Applied Analytics	PS5335	Machine learning: Concepts and applications	Online	In recent years, machine learning techniques have made significant impact in a wide range of application areas in various industries. This course provides an introduction to machine learning concepts and algorithms, as well as the application areas. Topics will include supervised and unsupervised learning, learning theory etc.	Instructor permission

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School of Professional Studies	Applied Analytics	PS5430	Applied text and natural language analytics	Online	This course will focus on advanced methods and systems that enable named entity recognition and disambiguation, topic modeling, sentiment analysis, word vector embeddings, abstractive summarization, meaning extraction, and deep learning for NLP. Weekly course lectures will offer a blend of theoretical material and hands-on class exercises, which will be put into practice through weekly assignments. Students who complete the course will be able to practice the gained knowledge as applied NLP data scientists in various business domains, including sales and marketing, financial modeling, credit risk analysis, legal trust and compliance, intellectual property and contracts management.	Instructor permission
School of Professional Studies	Applied Analytics	PS5160	Data modeling	Online	Data modeling is about understanding the data used within our operational and analytics processes, documenting this knowledge in a precise form called the “data model”, and then validating this knowledge through communications with both business and IT stakeholders. Underlying all successful applications is a robust and precise data model, and similarly, most software development failures are due to a lack of understanding of the data or data requirements. A data model is therefore an essential part of applications development including forward engineering, reverse engineering, and integration efforts. Forward engineering means focusing on business requirements, whereas reverse engineering means modeling existing systems to drive the support, replacement, or customization of applications. Integration projects such as business intelligence efforts, data lakes, and master data initiatives, require a consistent holistic view of concepts such as Customer, Account, and Product. This course helps students to master data modeling and build data models. Students have the opportunity to explore and create conceptual, logical, and physical data models. Students also learn to work with relational, dimensional, and NoSQL data models. After learning the styles and steps in capturing and modeling requirements, students have the opportunity to apply a best practices approach to building and validating data models through the Data Model Scorecard.	Yes
School of Professional Studies	Business Offerings	PS5030	Developing and implemeting new ideas	Online	Interested in starting your own company? Do you have an idea for a new product or service? Have you come up with a way to improve something that already exists? This course tackles the central business concept of how one creates, builds and leads companies. It looks at aspects of entrepreneurship and leadership for both individuals and teams in the face of complex situations. Using the case study method as taught in business school, also known as participant-centered learning, this course puts students in the role of an entrepreneur facing critical business decisions. A selection of guest speakers will offer firsthand experience on innovation and entrepreneurship.	Yes
School of Professional Studies	Enterprise Risk Management	PS5300	Managing human behavior in the organization	Online	In this course, students will gain an overview of major concepts of management and organization theory, concentrating on understanding human behavior in organizational contexts, with a heavy emphasis on the application of concepts to solve managerial problems. Students will work in a combination of conceptual and experiential activities, including case studies, discussions, lectures, simulations, videos, and small group exercises.	Yes
School of Professional Studies	Enterprise Risk Management	PS5570	Information technology risk management	Online	Students will learn how to better identify and manage a wide range of IT risks as well as better inform IT investment decisions that support the business strategy. Students will develop an instinct for where to look for technological risks, and how IT risks may be contributing factors toward key business risks. This course includes a review of IT risks, including those related to governance, general controls, compliance, cybersecurity, data privacy, and project management. Students will learn how to use a risk-based approach to identify and mitigate cybersecurity and privacy related risks and vulnerabilities. No prior experience or technical skills required to successfully complete this course.	Instructor permission
School of Professional Studies	Human Capital Management	PS5100	Introduction to Human Capital Management	Online	In this foundations course, students will examine the impact of industry dynamics (i.e., external industry trends, shifting workforce and workplace challenges) on human capital management (HCM) solutions and the competencies required of human resources (HR) professionals. Students will learn about effective strategies for designing human capital solutions and people development programs, including business-aligned and integrated approaches to talent management and cross-functional collaboration with organizational leadership. Students will be introduced to the latest practices related to advancing human capital implications for high-impact organizational performance and have an opportunity to apply practices to current industry and organizational challenges. The course will also introduce foundational approaches to measuring the effectiveness of human capital investment.	Yes

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School of Professional Studies	Human Capital Management	PS5160	People analytics & decision making	Online	Successful organizational leaders are increasingly turning towards human capital analytics (HCA) for workforce reporting to help make better, more informed, decisions about their human capital in terms of current needs and future goals. Helping to drive organization performance, HCA linked with decision making can deliver competitive advantage throughout an organization. This course provides students with skills necessary to take a strategic view of HCA and form effective hypotheses for the development of organizational insight. Students will review in depth systematic data collection techniques, analysis methods, and ways that data can be effectively presented. Looking closely at performance measures, students will practice planning, interpreting, and clearly articulating an organization's "people metrics" with the goal of improving decision-making about talent, financial measures, and the organization as a whole	Yes
School of Professional Studies	Human Capital Management	PS5290	Leading cross-cultural global organizations	Online	This course will cover the essentials necessary to lead and work across cultures in high performing global organizations and matrixed systems. The course will cover various cultural frameworks, identity work-style differences impacting interactions, communication, leadership, negotiation, conflict-resolution, and decision-making in complex environments. In this course, the core theories of culture will be examined and applied in relation to authority, power, leadership styles and work practices, as well as intercultural communication across cultural groups, including multicultural team dynamics and group leadership.	Yes
School of Professional Studies	Human Capital Management	PS5340	Inclusive leadership	Online	This course seeks to introduce students to the latest theory, research and practice of "Inclusive Leadership," an evolving framework, for understanding the role of people leaders, teams, and individual contributors in cultivating diverse, equitable, and inclusion environments in companies and organizations. This interactive, intensive course will leverage insights, research, and experiences of leading scholars and practitioners in the fields of leadership, diversity, and inclusion. The content covered is grounded in inclusive leadership development, diversity management, team effectiveness, organization development, and intergroup relations. Students will learn hands-on strategies for fostering inclusion at every level of the organization, and how and why it matters on the overall culture and climate of the organization in a systematic way. Class discussions, assignments, and readings will pose questions such as: How to foster a culture of inclusion? How do we know when inclusion is actually taking place?	Yes
School of Professional Studies	**Information and Knowledge Strategy**	**PS5995**	**IKNS Independent Study**	**Online**	**Students enrolled in this course will complete a review and synthesis of the academic literature surrounding an issue of their choice (within the broad field of knowledge management). You will be guided by a specific research question, approved by your instructor. During the course, students will meet individually with faculty periodically in order to review the status and progress of their research.**	**Yes**
School of Professional Studies	**Information and Knowledge Strategy**	**PS5990**	**Navigating the future of work**	**On campus**	**This course is designed to provide an understanding of the critical capabilities necessary for individual, team, and organizational success in the new world of work. Based upon current economic models, students will recognize the intangible factors within teams and organizations that drive decision making, knowledge, and culture as value and valuation of the work of organizations.** **Our core question is, how to start, build, and sustain leadership and organization capabilities for successfully navigating the future of work? The course will answer this question by looking at successful case examples who are demonstrably leading the way. We will bring actual leaders and entrepreneurs to the class for exchange with our class. The course will require students to work individually and in teams to build their own future of work models through unlearning and learning.** **Students will study modern exemplar organizations and leaders to harness their lessons for staying competitive and successful. We will explore the changing nature of work, provide the means for better understanding what is occurring, and develop strategies for successfully navigating this new world. This course will start by analyzing how platforms, robotics, AI, automation, data, digitization, and the speed of technology has changed work. The capabilities necessary for success require both technological expertise, as well as, human skill centered around leadership, knowledge, and cultures of trust, respect and intentional inclusion. Students will participate in an "intangibles" assessment survey that will measure behaviors associated with leadership, culture, and knowledge for driving performance. This approach allows for exploring how the intangible factors behind each of these change factors impact the world of work, workforces, and workplaces.** **Assignments will include determining individual work interests, skills and connecting them to organizational objectives and key results (OKR). Students will work in teams to design a future of work map and negotiate practices for their current organizations and clients.**	**Yes**

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School of Professional Studies	Information and Knowledge Strategy	PS5305	Networked work	Online	As the pace of technological change accelerates, and market disruptors lurk around the corner, organizations find that traditional hierarchies pose a huge disadvantage. Decision-making is often layered and ponderous, insular cultures block new ideas, and information moves inefficiently. Increasingly, managers find that, to compete, they need novel operating models. Organizations need to readily access resources and markets. At the same time, they need diverse intelligence, large multidisciplinary data sets, and novel product ideas. The answer lies in the network, an organizational construct that involves people engaging across boundaries, organizations, and/or geographies with shared knowledge-creation goals. For-profit and nonprofit organizations, alike, are embracing networks to share insights and data, act as a voting block, serve customers, and innovate. For example, realtor COMPASS, the World Health Organization, the World Bank, and electric cooperatives are all leveraging networks. The ideas of “open” and “collective” are no longer seen as a rarified university experiment. Now these present a viable means for a growing number of purposes: get to market faster, thwart climate change, clean the oceans, and find cures to intractable diseases. “Networked Work” presents the structure, impacts, and practical work of networks. There are many different forms of network, varying in size, shape and purpose. Yet there are some common practices and behavior models that trace their origins back to the science of the human brain, evolution and social and behavioral psychology. We will use the Knowledge Network Effectiveness Framework, a logic model flowing backwards from outcomes, to individual and social behavior, to dynamics, to design. We will also use other scholarly research, along with practical cases, to study different network forms: communities of practice, knowledge-networks, crowds, open source, open data, and open innovation. Students will envision, diagnose and design networks for “cooperative advantage.” We will do that while considering that networks operate in the context of human bias, social influence, common-pool resource dilemmas, and technology advancement. IKNS and other SPS students will find that the course aligns with the future of work, in which operations and innovation come increasingly from parties outside the organization or department. Work is more networked, collaborative, and integrative. This course relates to three main thrusts of the IKNS Program: - Digital transformation - Future of work - Leading collaboration	Yes
School of Professional Studies	Information and Knowledge Strategy	PS5991	Leading large complex projects	Online	The primary focus of this course will be around project leadership as projects are planned and executed (project management). The course will start by recognizing the need and benefits of project management for large complex global projects, explore characteristics of project managers, and study the commonality and differences in types of projects. The course will continue with understanding the essential capabilities of project management, and analyze the variations in project lifecycles. The course will address managing risk throughout the project lifecycle, controls, and performance measurement, and maximizing the use of knowledge. Lastly, the course will visualize the future of projects and project management structure and core capabilities. These lessons will be explored through the analysis and discussion of case studies of projects such as construction of the Denver International Airport, development of the F-35 Joint Strike Fighter, and the NASA Mars Pathfinder project. Throughout the course, students will work collaboratively to design, author, and present a Project Plan that (1) integrates the essentials for successfully managing a large global complex project and (2) reflects the attributes of a Project of the Future.	Yes
School of Professional Studies	Information and Knowledge Strategy	New	AI for knowledge driven organizations	Online	This course is an introduction to AI, geared specifically at knowledge managers and leaders and project managers in knowledge-driven organizations. As such, the target audience are transators of AI in organizations, rather than the AI practitioners themselves. The course will cover the basic applications of AI, how they work, when they are appropriate, and include the issues of bias and access. Class content will be taught around case studies from prototypically knowledge-driven organizations such as Googe, Stitchfix, and Amazon.	Yes

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School of Professional Studies	**Information and Knowledge Strategy**	**New**	**Engineering of knowledge systems**	**Online**	**In order to succeed in today's knowledge-driven economy, KM practitioners need to be grounded in a rigorous system view of the knowledge management process. This course will equip participants and KM practitioners with strategies on how to engineer knowledge systems for organizations. The course content will include systems engineering principles to demonstrate how a structured approach can be used to engineer knowledge systems that are responsive to technical needs of organizations (customers), leaders and innovators.** **The course will cover high level treatment of the principles that drives a structured approach to knowledge management concept and strategy analysis, design and development, operations, assessment and improvement, with the primary objective of achieving business outcomes, enabling mission success, project success, strategic success and innovation for organizations.** **In order to succeed in today's knowledge-driven economy, KM practitioners need to be grounded in a rigorous system view of the knowledge management process. This course will equip participants and KM practitioners with strategies on how to engineer knowledge systems for organizations. The course content will include systems engineering principles to demonstrate how a structured approach can be used to engineer knowledge systems that are responsive to technical needs of organizations (customers), leaders and innovators.**	**Yes**
School of Professional Studies	Negotiation and Conflict Resolution	PS5212	Conflict, social networks, and communication technologies	Online	Conflict, Social Networks, and Communications Technology (NECR PS5212) will analyze the relationship between conflict and communications technologies and will explore the challenges that individuals and networks face in using online technology for collaboration and conflict mediation purposes. The course will demonstrate how recent software and social media innovations can facilitate knowledge acquisition, network building, and the analysis and presentation of conflict-related data. Finally, it will analyze contemporary cases where developments in communications technologies have played a critical role in exacerbating and/or resolving conflicts. The course focuses on international peacebuilding, business, and human rights cases. The course will also instruct students in the use of social software (such as blogs, wikis, curation, and visual mapping) and improve their "digital literacy" on a range of technologies. It will also provide practical (and often provocative) examples and challenge students to reflect on how these tools will be useful in their professional development and work environment. As an elective offered by the Negotiation and Conflict Resolution (NECR) program, Conflict, Social Networks, and Communications Technology builds on students' conflict analysis skills (PS6125, PS6150), their ability to understand and apply relevant theories and frameworks to complex issues (PS5101), and their assessments as to what influences the behaviors and cultural understandings of conflict parties (PS5105, PS5107, PS5124, PS5205). The aforementioned courses will contribute to the understanding of this course's content and should, in general, be taken before this (or any other) electives.	Yes
School of Professional Studies	Negotiation and Conflict Resolution	PS5101	Understanding conflict and cooperation	Online	The field of conflict resolution has been developed academically as a discipline from diverse fields of knowledge. This course provides an introduction to the major schools of thought that contribute to the developments in social psychology, law, political science, social work, and business. The field of conflict resolution is also dynamically transforming, and the course introduces recent developments, particularly in the area of complexity and dynamical systems.	Yes
School of Professional Studies	Strategic Communications	PS5121	Activating employees	Online	Through strategic internal communication, employees are focused on driving business results and encouraged to act as brand ambassadors on behalf of their organization, building the organization's reputation. This course focuses on communication from the inside-out, addressing the opportunities, challenges, and issues communication professionals face today in dealing proactively and reactively with internal stakeholders. How can leaders build credibility with employees in an authentic way? How do you influence your CEO to take a leadership position and act as the champion of the employee communication effort? How can an internal communication strategy ensure truthful and respectful communication during times of change?	Yes

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School of Professional Studies	Strategic Communications	PS5270	Content strategy: Achieving business goals through content	Online	Sitting at the intersection of business strategy, digital development, user experience, communication, and publishing, content strategy has emerged over the last few years as a discipline examining the purpose behind content (in all manifestations) and how it supports business, organizational, and user goals. While it originated in digital web design and user experience, content strategy now encompasses a much broader set of considerations and addresses content creation, distribution, and governance across multiple channels, especially the interplay among digital, social, and traditional media. Content strategy provides a holistic approach for unlocking the value behind content and for increasing its effectiveness in achieving business and organizational objectives. This course will present the fundamentals of content strategy and explore the discipline's approaches, techniques, and tools that course participants can apply directly to the content situation in their own organization. It will draw parallels with – and highlight distinctions among – traditional communication strategy, publishing, and content strategy, and provide students with a framework to create a sustainable program grounded in meaningful, actionable content.	Yes
School of Professional Studies	Strategic Communications	PS5165	Influence: Behavioral Science and communication	Online	This course places students at the intersection of two converging fields, behavioral economics and communication, to teach them how our predictable irrationality can become a competitive advantage in persuading people, groups and organizations to take favorable actions. Through lectures, case analysis, and group projects, students learn and apply a variety of psychological principles to communication thinking, planning and leadership. Students are challenged to think broadly about communication — advertising, public relations, social media, content and internal communication — in their application of cognitive bias and heuristics principles including anchoring, framing, loss aversion, group biases, time-discounting and choice overload.	Instructor permission
School of Professional Studies	Sustainability Management	PS5220	Sustainable Entrepreneurship	Online	This course is distinctive from others at Columbia in several ways. This course puts sustainability concepts to work by inspiring students to think about value creation through the lens of ecological and social stewardship; then to test market their ideas, evaluate the business landscape, and create a thoughtful business plan and execution strategy. The class is appropriate for those with an interest in the unique challenges of starting a social good or clean technology company. This course requires business and technical proficiency gained in a competitive undergraduate program or commensurate professional experience. During the course, students will work in teams to formulate a business solution around a sustainability issue. All teammates will need to understand their solution, including technical and scientific aspects, and the mechanisms by which you develop a company and market your solution. This course is distinctive from others at Columbia in several ways. This course puts sustainability concepts to work by inspiring students to think about value creation through the lens of ecological and social stewardship; then to test market their ideas, evaluate the business landscape, and create a thoughtful business plan and execution strategy. The class is appropriate for those with an interest in the unique challenges of starting a social good or clean technology company. This course requires business and technical proficiency gained in a competitive undergraduate program or commensurate professional experience. During the course, students will work in teams to formulate a business solution around a sustainability issue. All teammates will need to understand their solution, including technical and scientific aspects, and the mechanisms by which you develop a company and market your solution. This course is distinctive from others at Columbia in several ways. This course puts sustainability concepts to work by inspiring students to think about value creation through the lens of ecological and social stewardship; then to test market their ideas, evaluate the business landscape, and create a thoughtful business plan and execution strategy. The class is appropriate for those with an interest in the unique challenges of starting a social good or clean technology company. This course requires business and technical proficiency gained in a competitive undergraduate program or commensurate professional experience. During the course, students will work in teams to formulate a business solution around a sustainability issue. All teammates will need to understand their solution, including technical and scientific aspects, and the mechanisms by which you develop a company and market your solution. This course requires business and technical proficiency gained in a competitive undergraduate program or commensurate professional experience. During the course, students will work in teams to formulate a business solution around a sustainability issue. All teammates will need to understand their solution, including technical and scientific aspects, and the mechanisms by which you develop a company and market your solution	Yes

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School of Professional Studies	Sustainability Management	PS5025	Corporate sustainability reporting and strategy	On campus	This course is designed for those who will hold positions in corporations with responsibilities for mapping and managing Environmental, Social and Governance (ESG)issues relating to a business, setting sustainability goals, communicating progress towards goals, and engaging with stakeholders, including civil society organizations, suppliers, customers, and investors. While a sustainability report is a snapshot in time of a company's performance against sustainability goals, the sustainability reporting process, is a continuous improvement cycle designed to embed sustainability within the corporation. This course will explore the interplay between corporate sustainability strategy and reporting. Expectations for how today's companies operate are rapidly evolving. It is increasingly recognized that by implementing sustainability management mechanisms, companies can better manage physical, regulatory, technological, and reputational risks, as well as create value through efficiencies and innovation. Embedding sustainability into the corporate DNA necessitates corporations to expand their horizons for strategic planning. Implementing sustainability reporting practices enables corporations to do just that.	Yes
School of Professional Studies	Technology Management	PS5115	Accounting and finance for technology	Online	An exploration of the central concepts of corporate finance for those who already have some basic knowledge of finance and accounting. This case-based course considers project valuation; cost of capital; capital structure; firm valuation; the interplay between financial decisions, strategic consideration, and economic analyses; and the provision and acquisition of funds. These concepts are analyzed in relation to agency problems: market domination, risk profile, and risk resolution; and market efficiency or the lack thereof. The validity of analytic tools is tested on issues such as highly leveraged transactions, hybrid securities, volatility in initial public offerings, mergers and acquisitions, divestitures, acquisition and control premiums, corporate restructurings, and sustainable and unsustainable market inefficiencies.	Instructor permission
School of Professional Studies	Technology Management	PS5120	Operations management in IT	Online	This course provides an examination of the role the technology leader plays in the daily operations and performance management of an organization. The course focuses on how tech leaders can manage both up and down within their organizations through critical examination of current IT topics such as Outsourcing, Cloud Computing, Enterprise Architecture (as a strategy), Information Security, Risk Management, IT Governance, and determining/communicating the business value of IT. Students leave the course with a deep understanding of the dramatically different priorities, skills, and actions required to succeed as an IT leader.	Yes
School of Professional Studies	Technology Management	PS5118	Behavioral challenges in technology management	Online	An in-depth study of the intricacies of managing technical personnel and management teams in a fast paced and evolving business environment. Emphasis is placed on key challenges including the management of multiple technology projects, software development processes, and communications among technology managers and senior managers, developers, programmers, and customers.	Yes
School of Professional Studies	Technology Management	PS5400	Modern database architecture	Online	This course provides coverage of modern database architecture and how organizations extract, transform, and load data to set the foundation for deep analytics within their organization. Students will develop a broad understanding of cloud-based computing environments such as Amazon's AWS and Microsoft's Azure, MapReduce and data parallel applications using Hadoop, noSQL databases such as MongoDB. Students will learn how to develop a strong working knowledge of relational and non-relational databases, structured and unstructured data, as well as scalability and performance issues as they relate to modern applied analytics. Students will cover different types and scales of data and how to apply the best database framework for their organization's analytic needs. The course will provide case studies from industry and students will apply their knowledge to architect real business solutions, not only the optimal architectural framework but the total costs, including hardware, software and human costs, to implement such a solution.	Yes
School of Professional Studies	Technology Management	PS5470	Blockchain, AI, and IT	Online	This course provides education at the executive level on the technology and design of Blockchains and their business implications. Technology executives need to understand the disruption and opportunities that decentralized ledgers (i.e., Blockchains) will create in the coming years. Indeed, the business impact of Blockchain technologies will likely be much larger than that which the internet itself has had because Blockchain will fundamentally change the power dynamic of data ownership. Blockchain is already impacting a variety of industries, and in this class we will look specifically at its analytical implications.	Yes
School of Professional Studies	Technology Management	PS5136	Cybersecurity strategy and executive response	Online	With high profile cybersecurity breaches and incidents occurring on an almost daily basis, cybersecurity strategy is a board-level topic. From Target Corporation to Sony Corporation, Chief Executive Officers (CEOs) and other c-suite executives are being held accountable for breaches of data, which has in turn driven interest at the board level in cybersecurity strategy, incident response, and technology risk management. Under the working assumption that a corporation's risk appetite, of which cybersecurity is one pillar, must drive its cybersecurity strategy and associated incident response, this course seeks to provide students with the tools needed to build, deliver and implement a cybersecurity strategy, obtain executive and board-level consensus around the proposed strategy, and develop an associated "cyber playbook" to respond to security incidents.	Yes

School	Program/Topic Area	Number	Name	Modality	Description	Open to IKNS
School of Professional Studies	Technology Management	PS5135	Enterprise information security: threats and defense	Online	Competition, espionage, theft, sabotage, and warfare, traditionally carried out “in the field” have erupted online. State-sponsored cyber-attacks target critical infrastructure, financial systems, government agencies, political adversaries, retail, and consumer databases, and the intellectual property of technology firms. This course covers the defensive techniques that address perimeter and data security. Business model relationships to security architecture are examined, in particular managing vulnerability introduced through mergers and acquisitions, and Active Directory migrations. Service and Administrative account management and other aspects of network design will be analyzed. Students will investigate recent newsworthy cases and devise countermeasures aimed at both incident prevention and effective CIRT (Cyber Incident Response) management.	Instructor permission
School of Professional Studies	Technology Management	PS5170	Re-engineering and the systems development life cycle	Online	This course provides students with the knowledge and techniques needed to lead major re-engineering projects, including reassessment of legacy systems and changing existing business processes. Understanding the differences between reengineering and continuous improvements and benchmarking is covered up-front together with common obstacles to business reengineering success (e.g., resistance to change, etc.) in an effort to drive towards a specific reengineering model. Legacy architectures from de-composable to non-decomposable are covered, and the role of gateways as well. The principles of distributed computing, i.e., object orientation, standards and the enterprise information architecture are covered as well as distributed systems designs and the level of performance testing needed to support them. Case studies are used to reinforce topics.	Instructor permission
School of Professional Studies	Technology Management	PS5141	Creating value in the experience economy	Online	One of the most fundamental changes wrought by the advent of interactive digital media has been creation of a partnership between the entertainment provider and the consumer. This evolution is marked by the democratization of creativity, acting, and the capturing and conveyance of human experience by the consumer. All of this is driven by the need and desire of the consumer to evoke and capture meaningful experiences. The merging of “work” and “play,” where every business is viewed as a theatrical experience, transcends the long-held belief that high-quality goods at competitive prices alone is the mark of success. Customization of service leads to transformative experiences, the kind we capture, convey, remember, and talk about long after they have occurred. Such is the aspiration of businesses seeking to reach the 21st century digital citizen marketplace. This course looks at myriad examples of successful – and unsuccessful – applications of these principles	Instructor permission
School of Public Health	(Health Policy and Management)	P8212	Digital health revolution (1.5 points)	Online	Digital health is the use of any and all digital resources to improve health by making it safer, more efficient, maximize outcomes and lower costs. It is transforming the delivery of healthcare and behaviors of all health sectors. The size and scope are fast growing and difficult to define at this point in its history. The Covid-19 pandemic has magnified the importance and uses of digital health. This course provides an overview of digital healthcare in the US, focusing on how and why digital health is revolutionizing healthcare for providers, patients and payors. Students will be equipped with the vocabulary, concepts and tools to understand the dynamic aspects of digital healthcare in today's environment, including its definition, its role in improving patient outcomes, provider satisfaction, reduction in costs and why this is accelerating. Students are encouraged to take the perspective of the executive and policy-maker in class discussions. In addition, the course surveys current digital tools and investment strategies in digital health.	Instructor permission
School of Public Health	(Health Policy and Management)	P8213	Health claims data analytics: Real world (1.5 points)	Online	Integrated individual-level health claim, biometric and risk data have many business uses across insurance, consulting, disease management, engagement and other digital healthcare organizations. The purpose of this course is to provide training to meet the data analytical job demands of these organizations with practical, hands-on experience exploring real corporate longitudinal data.	Instructor permission