MARYLAND HIGHER EDUCATION COMMMISSION
ACADEMIC PROGRAM PROPOSAL

PROPOSAL FOR:

_____ NEW INSTRUCTIONAL PROGRAM

__✓__ SUBSTANTIAL EXPANSION/MAJOR MODIFICATION

_____ COOPERATIVE DEGREE PROGRAM

__✓__ WITHIN EXISTING RESOURCES or _____ REQUIRING NEW RESOURCES

(For __each__ proposed program, attach a __separate__ cover page. For example, two cover pages would accompany a proposal for a degree program and a certificate program.)

Johns Hopkins University

Institution Submitting Proposal

2017

Projected Implementation Date

Master of Science	**Information Systems**
Award to be Offered	Title of Proposed Program

0506-10	**11.0109**
Suggested HEGIS Code	Suggested CIP Code

Carey Business School	**Bernard Ferrari, Dean**
Department of Proposed Program	Name of Department Head
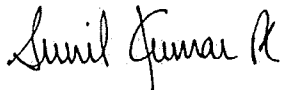
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Sunil Kumar R **1/9/2017**   President/Chief Executive Approval

Signature and Date

n/a   Date Endorsed/Approved by Governing Board

Date

The Johns Hopkins University
Carey Business School
Proposal for Substantial Modification to an Existing Program

Master of Science in Information Systems

A. Centrality to institutional mission statement and planning priorities

1. Program Description and Alignment with Mission

The Johns Hopkins University Carey Business School (CBS) is pleased to submit a proposal to substantially modify the existing and previously endorsed Master of Science of Information Systems (MSIS) (HEGIS code 050610; CIP code 110109) to create curricular changes and offer an online option. The Master of Science in Information Systems has been fully endorsed by Maryland Higher Education Commission and the Carey Business School has offered it since 2009.

The Master of Science in Information Systems (MSIS) is designed for Information Systems professionals who want to advance into leadership roles in their organizations or start their own business or consultancy, business professionals who want to leverage their expertise in functional areas, recognizing that advances in Information Systems are changing every part of an organization, and professionals who want to update their skills and learn the newest Information Systems concepts and tools so their organizations can succeed in the global marketplace.

The proposed modification would create an online option in the existing program, enabling the program and existing areas of concentration to be delivered via distance education; and modifying courses to ensure students in the online program will take the same courses and from the same faculty as students enrolled in campus-based courses.

In addition to the face-to-face mode of instruction, the Master of Science in Information Systems program will be modified to offer an online option. Students in the proposed program will have a choice among face-to-face courses, online courses, or a combination of both, in a hybrid modality. Students enrolled in the program's online courses will be afforded the same resources and services as students enrolled in the face-to-face courses, including instruction from the same quality faculty.

The mission of the Johns Hopkins University is to educate its students and cultivate their capacity for life-long learning, to foster independent and original research, and to bring the benefits of discovery to the world. The Johns Hopkins Carey Business School supports business knowledge development and education through our own initiatives, innovations, and collaborative programs across the Johns Hopkins University. We create and share knowledge that shapes business practices while educating business leaders who will grow economies and societies, and are exemplary citizens. The program is fully consistent with both missions.

2. Alignment with Institutional Strategic Goals

The Johns Hopkins University has a long history of teaching business courses to professionals including Information Systems professionals around the world. The MSIS curriculum was revised to respond to market conditions and align with the renewed mission of the school.

In addition to a solid foundation in Information Systems skills, the program also equips students with concepts and theories about the role of the COO, management, and shareholders. All of these align with Carey's vision to develop students into business leaders who will grow economies and societies, and are exemplary citizens.

B. Adequacy of curriculum design and delivery to related learning outcomes

1. Program Outline and Requirements

Program requirements include a minimum of 36 graduate credits. Students will be expected to have basic quantitative skills prior to starting coursework.

All students in part-time, full-time, online, and hybrid programs will take the following required coursework components:

Business Foundations (12 credits)
- BU.120.601 Business Communication
- BU.131.601 Business Leadership and Human Values
- BU.520.601 Decision Models
- BU.350.620 Information Systems
- BU.510.601 Statistical Analysis
- BU.680.620 Operations Management

Functional Core (12 credits)
- BU.510.650 Data Analytics
- BU.300.620 Managing Complex Projects
- BU.300.700 Developing Internet Systems and Services
- BU.350.710 IT and Global Sourcing Strategy
- BU.330.705 Telecom Clouds and Mobile Application
- BU.330.790 Applied IS Architecture
- BU.520.620 Optimization Models

Elective Courses (students select a minimum of 12 credits)
- BU.360.701 Competitive Intelligence
- BU.610.705 Crisis Management
- BU.330.730 Cybersecurity
- BU.330.780 Digital Data and Business Intelligence
- BU.520.620 Optimization Models

- BU.550.605 Legal Foundations of Health Care
- BU.152.710 Entrepreneurial Ventures
- BU.350.720 Emerging Frontiers in Health Care: Strategy and Technology
- BU.610.750 Global Supply Chain Management
- BU.550.620 Innovations in Health Care Delivery
- BU.550.610 Health Care Financing

Business Foundation courses are a subset of the course offerings that cover all Masters level programs in the school. These courses ensure coverage of introductory material and establish consistency across all Carey programs. The functional core and elective courses were developed explicitly for this program but are open to students from other programs as electives.

See Appendix A for a complete list of course titles and descriptions.

2. Educational Objectives and Student Learning Outcomes

Upon successful completion of the program, students will:

- Understand and master core concepts and methods in the information systems discipline and their application in business practice
- Function effectively in diverse business contexts
- Anchor information systems aspects of business activities in ethics and human values
- Communicate effectively in business settings

3. General Education Requirements

Not applicable.

4. Specialized Accreditation/Certification Requirements

Not Applicable.

5. Contract with Another Institution or Non-Collegiate Organization

Not Applicable.

C. Critical and compelling regional or statewide need as identified in the State Plan

1. Demand and Need for Program

The transformation of postsecondary teaching and learning to include online education is a phenomenon that cannot be understated. Institutions of higher education are welcoming a generation of learners with a disposition towards learning that is fundamentally different from past generations. Today's learners are motivated to receive and adept at

receiving knowledge at their own pace and locations of their choosing. These learners are gravitating towards online learning due to shifts in access, technological advancements, and convenience.

As stated in the 2013–2017 Maryland State Plan for Postsecondary Education, *"Maryland Ready* captures the state's commitment to progressive thinking, resiliency, responsiveness, inclusiveness, and thoughtfulness as we move forward during an era of rapid and unparalleled change for higher education."[1]

In turn, the MSIS program, modified for online delivery, will immerse students in a curriculum that allows them to anticipate change and leverage the latest technology to make their companies and organizations smarter. It will challenge and nurture students in a way that will fulfill the Maryland Ready goals.

2. Alignment with the 2013-2017 Maryland State Plan for Postsecondary Education[1]

The MSIS program is well aligned with the State's Plan for Postsecondary Education. The Maryland State Plan articulates six goals for postsecondary education: 1) quality and effectiveness; 2) access, affordability and completion; 3) diversity; 4) innovation; 5) economic growth and vitality; and 6) data use and distribution. This program addresses most of these goals.

Relative to Goal 1 of the Maryland State Plan ("Enhance its array of postsecondary education institutions and programs, which are recognized nationally for academic excellence and more effectively fulfill the evolving educational needs of its students, the state and the nation"), the Carey Business School is committed to developing the MSIS online program, utilizing the school's renowned faculty and collaborators.

In addition to the commitment to excellence and effectiveness, the Carey Business School is committed to ensuring access and affordability, consistent with Goal 2 of the Maryland State Plan ("Achieve a system of postsecondary education that advances the educational goals of all by promoting and supporting access, affordability and completion"), by providing scholarships to help students afford graduate education, using a combination of internal and external sources.

The Carey Business School is committed to the Maryland State Plan's Goal 3 ("Ensure equitable opportunity for academic success and cultural competency Maryland's population") and aspires to have a diverse student body in all programs. Furthermore, through the development of strong and clear student learning outcomes and objectives, the proposed program also aligns with Goal 4 of the Maryland State Plan ("Seek to be a national leader in the exploration, development, and implementation of creative and diverse education and training opportunities that will align with State goals, increase student engagement, and improve learning outcomes and completion rate").

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[1] http://mhec.maryland.gov/Documents/MHECStatePlan_2014.pdf

Considering the projected demand for well-educated and qualified information systems management professionals to address the new and future challenges of government and corporate information systems, the proposed program is aligned with Goal 5 of the Maryland State Plan ("Stimulate economic growth, innovation, and vitality by supporting a knowledge-based economy, especially through increasing education and training and promoting the advancement and commercialization of research").

D. Quantifiable and reliable evidence and documentation of market supply and demand in the region and State

1. Market Demand[2]

The U.S. Bureau of Labor Statistics predicts that by the year 2024, the need for computer and information systems managers will grow by 15 percent, much faster than the average for all occupations[2]. As firms and organizations expand their operations to digital bases, the need for computer and information systems managers will increase in various sectors. The MSIS program is well suited to meet this growing need.

The Bureau of Labor Statistics (BLS) Occupational Outlook Handbook suggests that there were 348,500 computer and information systems manager positions in 2014 and predicts a projected growth of 15% by 2024. This is an employment change of 53,700 jobs in a 10-year period. The MSIS program will meet this demand for a workforce with the skills to lead analytics, big data, and infrastructure IT initiatives.

Students graduating from the MSIS program will also have the opportunity to pursue careers as computer systems analysts[3], information security analysts,[4] network and computer systems administrators[5], computer support specialists[6], computer user support specialists[6], and computer network support specialists[6]. The Bureau of Labor Statistics (BLS) Occupational Outlook Handbook predicts that the employment in all these fields will increase significantly by the year 2024.

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[2] http://www.bls.gov/ooh/management/computer-and-information-systems-managers.htm
[3] http://www.bls.gov/ooh/computer-and-information-technology/computer-systems-analysts.htm
[4] http://www.bls.gov/ooh/computer-and-information-technology/information-security-analysts.htm
[5] http://www.bls.gov/ooh/computer-and-information-technology/network-and-computer-systems-administrators.htm
[6] http://www.bls.gov/ooh/computer-and-information-technology/computer-support-specialists.htm

Table 1 represents the projected job growth in occupations related to Information Systems.

Table 1. Estimated Job Growth, 2014-2024

Occupational Title	Employment, 2014	Change, 2014-2024		Projected Employment, 2024
		Percent	**Numeric**	
Computer and Information Systems Managers	348,500	15%	53,700	402,200
Computer Systems Analysts	567,800	21%	118,600	686,300
Information Security Analysts	82,900	18%	14,800	97,700
Network and Computer Systems Administrators	382,600	8%	30,200	412,800
Computer Support Specialists	766,900	12%	88,800	855,700
Computer User Support Specialists	585,900	13%	75,100	661,000
Computer Network Support Specialists	181,000	8%	13,600	194,600

The MS in Information Systems is designed to draw candidates from both public and private sectors. Table 2 details the estimates of the personnel employed at private institutions that employ MSIS graduates:

Table 2. Private Institutions Focused on Computer and Information Systems

Company	Location	Employees
Amazon Web Services	World Wide	230,000[7]
Deloitte	USA	78,642[8]
PwC	North America	57,800[9]
IBM	USA	92,000[10]
Booz Allen Hamilton	USA	22,000[11]
Microsoft	USA	64,336[12]
JPMorgan Chase	USA	180,583[13]
Brookings Institution	Washington, DC	300[14]
	Total:	**563,661**

[7] http://phx.corporate-ir.net/phoenix.zhtml?c=97664&p=irol-reportsAnnual
[8] https://www2.deloitte.com/us/en/pages/about-deloitte/articles/facts-and-figures.html
[9] https://www.statista.com/statistics/189763/number-of-employees-of-pwc-by-region-2010/
[10] http://www.computerworld.com/article/2493565/it-careers/in-a-symbolic-shift--ibm-s-india-workforce-likely-exceeds-u-s-.html
[11] http://www.boozallen.com/careers/career-locations
[12] http://news.microsoft.com/facts-about-microsoft/#EmploymentInfo
[13] https://www.statista.com/statistics/250220/ranking-of-united-states-banks-by-number-of-employees-in-2012/
[14] https://www.brookings.edu/about-us/

For the public sector, the Carey Business School is well positioned geographically to offer the MSIS program to professionals and leaders within federal government operations. Considering that a significant portion of these positions are located in the greater Washington, D.C. metro area, the MSIS provides a convenient opportunity for government employees working in security and defense to build their management expertise in these sectors.

Over the past five years, the Johns Hopkins University and the Carey Business School have been monitoring and tracking the number of inquiries and applicants to the current Carey Master of Science in Information Systems program. Overall, inquiries have significantly increased. Table 3 shows the inquiries and enrollments from 2014/15-2016/17 to the programs with focus on Information Systems.

Table 3. Inquiries and Enrollments from 2014/15-2016/17 to the Programs with Focus on Information Systems.

Academic Year	Inquiries for the programs with focus on IS	Growth %	Enrolled PT
2014/15	501	-	13
2015/16	615	23%	25
2016/17	669	9%	40

The demand from prospective students to the Carey Business School's academic offerings in Information Systems and the Information Systems concentration in the MBA program has been increasing.

2. Educational and Training Needs in the Region

Based on the projected growth in public and private sector Information Systems opportunities—such as computer and information systems managers, computer systems analysts, and information security analysts—and the increase in interest in the Carey Business School's MS programs, the school anticipates that there will be significant demand for graduates from the proposed MS in Information Systems program. The expectation is that graduates of the program will go on to serve in managerial and leadership positions in corporations, government departments, and other domestic and international organizations facing complex business and information systems challenges.

3. Prospective graduates

The part-time enrollment has advanced from 13 to 25 to 40 students. Over the next three years, we plan to enroll approximately 50, 55, and 60 students. Since the full-time program is designed to require completion in three semesters, we expect our annual graduation rates to match these admission targets. The part-time program lags the full-time program but is projected to include 25 students per year starting 3 years from now.

E. Reasonableness of program duplication

1. Similar Programs

After reviewing Maryland universities' existing graduate programs, four schools currently offer Master's programs broadly related to information systems.

The following list notes these institutions and their associated master's programs:

- Towson University
  - MS Computer Science
  - MS Information Technology, Applied
- University of Maryland, College Park
  - MS in Information Systems
  - MS in Computer Systems
- University of Maryland University College
  - MS in Cybersecurity Technology
  - MS in Information Technology
- University of Maryland Baltimore County
  - MS in Computer Science
  - MS in Information Systems
  - MS in Information Systems (online)
  - MPS in Cybersecurity

Distinct from the programs listed above, the proposed MSIS program is intended to offer an immersive educational experience at the intersection of business, technology, and the human element. In addition to providing students with the knowledge of theoretical and applied computing principles to solve complex business problems, the program helps students learn how to leverage the art and science of information systems to become a better leader. The MSIS program is unique in its ability to inspire students to use information technology to improve decision making and increase organizational effectiveness. The program offers a valuable experience for students from fields beyond IT who want to enhance their understanding of technology's role in business, differentiate themselves in the marketplace, and transition into a leadership role.

The MSIS program is unique to this field in its ability to inspire student outcomes through business education that is aligned with Johns Hopkins University's core principles and learner's desire to enrich their lives, business, and community.

2. Program Justification

Information systems and technologies are revolutionizing the way we live and work. The rapid pace of technological advances requires a new generation of talented and tech-savvy business leaders who possess a framework of foundational knowledge to anticipate change and recognize opportunities for true business value from adapting new

technologies. The MSIS prepares students to lead IT initiatives aimed at organizational success, providing secure infrastructure platforms and breakthrough strategic advantage.

There are a number of distinguishing factors in the proposed program that will make it attractive to prospective MSIS candidates. One factor of the program is its target audience. The MSIS program appeals to candidates involved in many public and private industries and sectors. In addition to attracting technology professionals, the program offers valuable experience for students from fields beyond IT who want to enhance their understanding of technology's role in business, differentiate themselves in the market place, and transition into leadership roles.

The program will incorporate topics such as Data Analytics, IT and Global Sourcing Strategy, Applied IS Architecture, and Managing Complex Projects that are critical to any business operating in the global modern marketplace. The MSIS program includes these perspectives to appeal to a diverse candidate base.

In addition to quantitative courses, the strong focus on leadership will be presented through courses such as Business Communication and Business Leadership and Human Values.

The current proposal is to modify the program for online delivery. The program modification is justified based on the related job sector growth nationally and in the State of Maryland. An online option will expand the reach of business education to sectors, communities, and students that would otherwise not have access.

F. Relevance to Historically Black Institutions (HBIs)

The Historically Black Institutions in Maryland offer various graduate programs that include MBA and MS programs. Bowie State University offers MS in Management Information Systems (MSMIS), and MS in Computer Science (MSCS) programs. Coppin State University offers BS in Management Information Systems, but not similar graduate level programs. University of Maryland Eastern Shore offers Master of Science in Applied Computer Science program. Morgan State University offers a Master of Business Administration (MBA) program. Given the programs offered by the Maryland Historically Black Institutions, we do not foresee any impact from the Carey Business School MSIS program on these institutions.

G. Evidence of the Principles of Good Practice

See Appendix C for the evidence that this program complies with the Principles of Good Practice for distance education.

The Higher Education Opportunity Act (HEOA) enacted in 2008 requires that an academic institution that offers distance education opportunities to students 1) has a process established to verify that the student who registers is the same student who participates in and completes the offering and receives academic credit for it, 2) has a

process established to verify that student privacy rights are protected, and 3) has a process established that notifies the student about any additional costs or charges that are associated with verification of student identity. In this graduate program, the following actions have been taken to satisfy these requirements: 1) students may only enter the academic website for the online courses they take by providing their unique student ID and password they receive when they are admitted to the programs, 2) all FERPA privacy rights are preserved by limiting access very specifically in the University student information system to only those permitted by law to have access to restricted student information, and 3) there are no additional costs assessed to the student for the measures we use to verify student identity.

H. Adequacy of faculty resources

The Carey Business School is fortunate to possess a core of experienced full-time faculty members who are available to teach, advice, or serve on the curriculum committees in the Master of Science in Information Systems program. All but one has earned a doctoral degree with the only other one holding an MS and having years of relevant professional and teaching experience. Each holds a primary appointment at the Carey Business School, and has considerable experience conducting and disseminating research in their area of expertise. Appendix B highlights each core faculty member's expertise related to the MS in Information Systems. At the time of this writing, it has yet to be determined which specific courses each individual faculty member will teach.

I. Adequacy of library resources

The Johns Hopkins University Sheridan Libraries have a history of strong and continued support for the Carey Business School. Significant resources are allocated to build collections and provide academic liaison services that support the research and teaching of the faculty and help students with the knowledge they need to become well-educated managers. In addition to more than 3.7 million books, 211,000 maps, and 15,000 DVDs, the libraries provide 24/7 access to a rich collection of electronic resources, including over 171,000 print and e-journals, and more than 900,000 e-books. Included in the libraries' special collections are rare books, manuscripts, digital collections, and archival materials. The library's materials and services reflect the development and increasing diversification of resources used for teaching, research, and scholarship.

The Carey Business School is served by two academic liaison librarians with subject area expertise in business, who provide research consultation and instructional services to faculty and students, and who help build electronic and print collections to support the teaching and research needs of the university.

J. Adequacy of physical facilities, infrastructure and instructional equipment

The proposed Master of Science in Information Systems online option will not impact the Carey Business School's physical facilities and infrastructure.

K. Adequacy of financial resources with documentation

Details concerning the resources and expenses may be found in Appendix D.

L. Adequacy of provisions for evaluation of program

On a day-to-day level, the program will be overseen by a combination of the Vice Dean for Education, the Associate Dean for Admissions and Academic Programs, the Associate Dean for Student Development (who oversees academic advisers), the Registrar and a faculty Academic Program Director who together will be responsible for managing the program plans, monitoring students' progress in programs and ensuring that the students are in good academic standing according to the school's policies, as well as managing course offerings, conducting program evaluations, and working with the Curriculum Committee. The School's curriculum committee will be responsible for revision of the curriculum and recommendations for the required modifications with the course offerings and evaluation of the faculty expertise required for these course offerings, and evaluating how students achieve the desired learning outcomes. In addition to the administrative structure mentioned above, the office of Teaching & Learning@Carey manages the course evaluation process and provides instructional design that is useful in assuring the quality of all academic courses and programs and will be integral to the design of a coordinated and coherent set of courses and pedagogical approaches for the Master of Science in Information Systems program.

M. Consistency with the State's minority student achievement goals

The Johns Hopkins University follows all stipulations of Title VI, Title IX, and Section 504. Accordingly, race is not considered in the administration of the school's educational programs. Nonetheless, in accordance with the Johns Hopkins University's stated commitment to diversity, we believe educators should use aggressive and innovative recruitment and support processes to increase and sustain diversity. To that end, the following focused recruitment activities will be employed: (1) Involvement of students from culturally and linguistically diverse (CLD) backgrounds in the planning and delivery of information sessions and recruitment information; (2) Success stories about previous CLD graduates as part of the recruitment literature; (3) Focused information meetings that emphasize that the school provide mentoring opportunities and a range of student activities including student clubs that encourage participation of students from different cultural, academic and professional backgrounds.

N. Relationship to low productivity programs identified by the Commission

Not Applicable.

Appendix A
Course List and Descriptions

Business Foundations (core courses): 12 credit hours

BU.510.601 Statistical Analysis
Students learn statistical techniques for further study in business, economics, and finance. The course covers sampling distributions, probability, hypothesis testing, regression and correlation, basic modeling, analysis of variance, and chi-square testing. The course emphasizes statistics to solve management problems. Case studies, spreadsheets, and SPSS computer software are used.

BU.520.601 Decision Models
This course discusses quantitative methods that have proven to be particularly useful for decision making in business settings. The course covers a variety of models and methodologies. While a number of software programs are available, the course will leverage the capabilities of Excel for a large number of topics. An emphasis will be placed on formulating problems, translating those formulations into useful models, optimizing and/or displaying the models, and interpreting results. The lessons of this course prepare students to perform the analysis required in subsequent courses and in practice. Topics such as Linear and Integer Linear Programming, Network Flow, Decision Analysis, and Monte Carlo Simulation will be discussed to demonstrate applications in planning and control for different types of business decisions.

BU.680.620 Operations Management
The production of goods and services requires obtaining resources, transforming them into products, and then moving them through a distribution system to reach customers. Students take a process view of these value-added functions that lead to an understanding of how to make design choices that lead to more efficient and effective production.

BU.350.620 Information Systems
This course addresses how markets, market mechanisms, and channels of product and service delivery are impacted and often transformed by information and communication technologies. Students will learn how technology, brought together with people and processes into systems, contributes to leveraging the creation of business value. The course considers different elements of the information architecture of the corporation and its impact on the nature of the work and the structure of the corporation. No credit given to MSIS students. MSIS graduates seeking an MBA degree are waived with replacement from this course.

BU.120.601 Business Communication
This course refines students' skills in written and oral communication to internal and external audiences. Through analyses and practice of communication strategies adopted by successful business professionals, students learn to write clearly and concisely, make compelling oral presentations, construct effective arguments.

BU.131.601 Business Leadership and Human Values

This course explores ethical leadership as a framework for enterprise value creation in a complex environment of competing economic and moral claims. Students examine the intrinsic ethical challenges of leadership and the concept of a moral compass as a foundation for responding effectively to the ethical challenges of corporate citizenship and value creation in a competitive global economy.

Functional Core (required courses): 6 credit hours

BU.330.790 Applied IS Architecture

This course provides students with an integration over prior learning and an application of IS principles and practices in a challenging setting of a significant case or real organization. Within this project-based context, students investigate contemporary information systems and technology architectures that constitute operational and productivity platforms for modern enterprises.

BU.510.650 Data Analytics

This course prepares students to gather, describe, and analyze data, using advanced statistical tools to support operations, risk management, and response. Analysis is done targeting economic and financial decisions in complex systems that involve multiple partners. Topics include: probability, statistics, hypothesis testing, experimentation, and forecasting.

BU.300.700 Developing Internet Systems and Services

The subject of this course is the development of services that are delivered over the Internet: system feature specification, design, user interface, implementation, and the role of development environments. Increasingly, the delivery of services and user access to them is driven by considerations of third-party development, user platform specifications, security, privacy, and performance. Much of the focus of contemporary development is on mobile apps, reflecting the changing modes of behavior and expectations of users for instant availability of highly special-purpose and location-aware applications. This course will consider these trends and their implications for design and development.

BU.300.620 Managing Complex Projects

This course equips students with effective techniques, methods, and practices for defining, scoping, and planning a project, and then managing it to successful completion. Special areas of emphasis in the course are driven by practical experiences with large and complex projects frequently being late, over budget, and failing to meet specifications. Particular attention is paid to understanding project complexity, risk, and uncertainty so that students are prepared to address these challenges to success. Students will gain experience using a leading project management software package.

BU.350.710 IT and Global Sourcing Strategy
This course covers information technology developments and global-sourcing strategies. Specifically, it includes two interrelated topics. First, it covers strategic planning models in which it examines business and corporate strategies which require students to assume the role of a general manager or chief technology officer (CTO) where they have to cope with tremendous complexity, uncertainty, and inadequate information to make strategic decisions. Second, this course covers how advances in telecommunication technology along with the process of global collaboration and value creation enable the creation and delivery of new products and services. The course also explores various country evaluations and risk analyses techniques, and the opportunities and threats that business organizations face as a result of these business and technological trends. Finally, this course examines various global-sourcing and collaborations strategies, the role of standardization in global supply chains integration, and how technology influences new forms of value creation such as public-private partnerships and hybrid entrepreneurial forms in developing economies and how their businesses can develop capabilities, capacities, and competencies required to participate in global collaboration and value creation networks.

BU.330.705 Telecom Clouds and Mobile Applications
This course covers technological advancements in telecommunications and emerging wireless mobile systems, with emphasis on their business application: how these advances are driving business models and amplifying the strengths of today's firms; how businesses can select, integrate, and apply telecom and emerging mobile systems and cloud services into their business processes to maximize their value creation, value capture, and value delivery. Business applications and contents delivered by mobile systems in public and private sectors—such as in healthcare services (mHealth), in financial and banking industries (mCommerce), mobile money and credits in social entrepreneurship will be covered. Analysis and selection of the needed telecom and mobile technologies, necessary to support business applications and processes, are examined. This course enables the students to gain an in-depth understanding of different telecom network systems, their developments and international standards. Finally, managerial, business critical, and technical issues such as technology evaluation, cost vs. performance trade-offs analysis, requirements analysis and vendor selection as they are needed by today's commercial and public organizations are covered.

Elective Courses (select 6 out of 10 courses): 12 credit hours

BU.360.701 Competitive Intelligence
Competitive Intelligence (CI), as defined by the Society of Competitive Intelligence Professionals (SCIP), is a systematic and ethical program for gathering, analyzing, and managing external information that can affect an organization's plans, decisions, and operations. Students learn to apply the CI process and CI-related methodologies, techniques, and tools to better analyze an organization's current and future competitive position. Students apply analytical and socio-technical techniques to improve organizational decision making as related to CI, and should understand the issues related to the collection, analysis, and management of external information.

BU.610.705 Crisis Management

This course examines the options faced by managers when organizations face crisis due to external factors outside the organization's control as well as internal failures and/or errors. Students will develop tools and methods to identify emerging crises, implement mitigation strategies to limit exposure, manage response teams and create communications to address stakeholder and public relation issues.

BU.330.730 Cybersecurity

This course considers the contemporary cybersecurity threat landscape facing organizations. Students apply various risk frameworks to provide structure to the decision making needed to invest in resources for security controls and countermeasures. Multiple strategies are explored, including policies, procedures, training, strategic alliances, technologies, and methodologies, especially drawing upon risk management and financial decision making that are used in other sectors of an organization. Topics include qualitative and quantitative risk analysis, audits, metrics, vulnerability assessment, capital budgeting, return on security investment, legal and regulatory compliance, and security best practices. The course will prepare students to be successful in taking on leadership roles in assuring the security of an organization's operations.

BU. 330.780 Digital Data and Business Intelligence

This course introduces a set of fundamental principles and a framework that guide extracting business insights from data to generate competitive advantage, and examines how the ubiquity and massiveness of digital data and the application of business intelligence have changed competitive landscapes. The business intelligence techniques that will be covered in this course include data visualization, online social network and sentiment analysis (for user-generated content), and predictive analytics (e.g. classification and clustering), which are widely used in the real world. The topics and cases discussed in this course cover a wide range of fields, including marketing, finance, and healthcare. This course is not a statistics or computer programming course. The emphasis will be on applications and interpretations of the results from business intelligence techniques for making business decisions. Students will apply these techniques in hands-on exercises analyzing strategic concepts, allowing students to deepen their understanding of the fundamentals and the applicability of business intelligence.

BU. 152.710 Entrepreneurial Ventures

This course focuses on the knowledge, skills, and attitudes that enable entrepreneurs to pursue opportunities in business development. Students form teams to experience each step of the entrepreneurial process. The end result is an opportunity assessment of a business idea. Emphasis is placed on a hands-on approach with learning supplemented by cases appropriate to each phase of the course. Entrepreneurs and subject experts expose students to real entrepreneurial operations and businesses, such as incubator and venture capital firms, via consultations and presentations.

BU.610.750 Global Supply Chain Management

This course introduces the concept of supply chain coordination. It then applies this idea to consider its implications regarding supply chain disruptions, response, and repair. Particular attention will be given to supply chains that deal with humanitarian missions, and supply of critical goods including food, water, and medical supplies.

BU.550.620 Innovations in Health Care Delivery
This course covers the organization of care delivery and the perspectives of its stakeholders (patients, physicians, hospitals, insurers, employers, communities, and government) and the unique attributes of the health care market, products and services. It provides an overview of the evolution, structure and current challenges in the current U.S. health care system as compared to nationalized health care delivery systems. Business models for acute, primary and chronic care services and the horizontal and vertical integration of care are analyzed, as are the legal and organizational models of hospitals and integrated delivery systems, physician partnerships, and post-acute care facilities.

BU.550.605 Legal Foundations of Health Care
This course provides students with an overview of the legal environment as it affects medicine and business. Cutting-edge cases are utilized as students explore medical malpractice, negligence, liability (physician, product, and corporate), intellectual property, criminal aspects of healthcare, patient consent and rights, and healthcare reform.

BU.520.620 Optimization Models
This course trains decision makers to function in the face of multi-dimensional uncertainty, through the development and use of optimization models. Mathematical abstractions are created which deal with issues including resource allocation, scheduling, pricing, and other responses to the realization of a variety of "known unknowns". Topics include linear programming, dynamic programming, multi-criteria optimization, and non-linear optimization.

BU.350.720 Emerging Frontiers in Health Care: Strategy & Technology
This course examines healthcare organizations from the perspective of managing the information systems that exist within the enterprise. Identifying the clinical and healthcare delivery processes and how they relate to information systems is a main focus. The intent of the course is to identify the key issues confronting the management of healthcare information systems today, examine their causes, and develop reasonable solutions to these issues. Specific federal regulations, vendor solutions, and financial implications as they relate to healthcare information systems are also examined. Course formerly offered as Health Care Information Systems: Emerging Frontiers in Health Care and Technology.

BU.550.610 Health Care Financing
This course covers the analysis of the major financial decisions of corporations in the health care industry and application of techniques of corporate finance in the health care industry. Financial and operating decisions in the industry are discussed, as are the valuation of profitability and cost performance of service and product lines, the impact of cost containment and competition on hospitals and integrated delivery systems and other providers, modeling of cost drivers in health care including cost and production functions, cost accounting systems and concepts of price and value. This course will also deal with managed care and risk management in relation to the relative roles of private sector and public sector insurance and providers, and the effect of delivery system design on cost, quality, and efficiency and equity. Topics related to the payment for the elderly, the poor, medically indigent and the underinsured are covered. Finally, innovations such as insurance exchanges and changing models of employer self-insurance are explored.

Appendix B
Representative Faculty

The following list consists of full-time faculty who may teach in the modified MSIS program:

Name/Rank/Specialty	Area of Expertise / Research
William Agresti, PhD Professor	William W. Agresti, PhD, is a Professor in the practice track with expertise in information systems and large-scale project management. His teaching interests include Project Management for Information Systems, Data Mining and Discovery Informatics, Economics of Information Security Among Professor Agresti's honors and distinctions are NSF Director's Award, National Science Foundation; NASA Group Achievement Award; Six best paper awards and over 100 publications in software engineering and management, and others. Prof. Agresti has served on the editorial boards Information Systems Security, Empirical Software Engineering; Expert Systems with Applications, and others.
Ravi Aron, PhD Associate Professor	Ravi Aron, PhD, is an Associate Professor in the research track with expertise in the areas of information technology strategy, healthcare strategy and healthcare information systems. His teaching interests are Emerging Frontiers in Healthcare Technology, Health Care Information Systems, Information Technology & Strategy, Research Seminar on Technology Enabled Businesses & Strategies in Emerging Market Contexts, and Digital Marketplaces.
G. Reza Djavanshir, DSc Associate Professor	Reza Djavanshir, Doctor of Science in Systems Engineering and Engineering Management, is an Associate Professor in the practice track with expertise in the areas of Global Sourcing and Supply Chains, Technology Transfer & Strategic Planning, Technology Institutionalization, Auto-poetic Meta-Systems Design, and Systems Integration strategies. His teaching interests include Strategy Architecture, Advanced Topics in Systems Designs and Integration, Global-sourcing Strategy and Telecommunication Networks and Systems.
Chester Chambers, PhD Assistant Professor	Chester Chambers, PhD, is an Assistant Professor in the research track with expertise in the areas of operations management strategy, dynamic programming and modeling. His teaching interests include Management of Service Operations, Operations Management Core, Operations Strategy, Operations and Supply Chain Management, Advanced Manufacturing Strategy.

Name/Rank/Specialty	Area of Expertise / Research
Ruxian Wang PhD Assistant Professor	Ruxian Wang, PhD, joined the Johns Hopkins Carey Business School in 2013. Before returning to academia, he worked in Hewlett-Packard Company for several years. He is currently an Assistant Professor in the research track with expertise in the areas of assortment planning, pricing, revenue management and operations management. His teaching interests include Operations Management, Business Analytics, and Data Analytics. Hi awards include: The Black & Decker Research Fund (The Johns Hopkins Carey Business School, 2014), Practice Award of the INFORMS Revenue Management and Pricing Section (2012).
Changmi Jung, PhD Assistant Professor	Changmi Jung received her PhD in Healthcare Information Systems from Carnegie Mellon University. She joined the Johns Hopkins Carey Business School in 2014. Her main research area is clinical health informatics, with particular focus on the innovative e-Health delivery models via patient portals and online consultations. Her dissertation explores technology adoption of innovations by patients and organizational learning by physicians as new care delivery models are introduced in the primary care environment. Her teaching interests include: Healthcare Information Systems, Digital Innovations in Healthcare.
Sanghee Lim, PhD Assistant Professor	Sanghee Lim, PhD (Technology & Operations, University of Michigan), joined the Johns Hopkins Carey Business School in 2013. She is an Assistant Professor in the research track with expertise in the areas of information technology strategy and organizational networks.
Arnab Bisi, PhD Assistant Professor	Arnab Bisi, PhD (Hong Kong University of Science and Technology) is an Assistant Professor on practice track at the Johns Hopkins Carey Business School from 2014, with expertise in Operations Management and Business Analytics. Dr. Bisi's teaching interests include operations management, supply chain management, business analytics, six sigma quality management, project management, operational risk management, applied stochastic processes, business forecasting. Among awards and honors received by Louise Schiavone are following: CIBER Summer Faculty Research Award, CIBER Summer Faculty Research Award, Faculty Research Award from the Dauch Center for the Management of Manufacturing Enterprises and the Global Supply Chain Management Initiative of Purdue University, CIBER Faculty International Travel Award.

Name/Rank/Specialty	Area of Expertise / Research
Sanghee Lim, PhD Assistant Professor	Sanghee Lim, PhD, joined the Johns Hopkins Carey Business School in 2013. She is an Assistant Professor in the research track with expertise in the areas of information technology strategy and organizational networks. Her teaching interests include Information Systems and Data Science. Her awards include: Gilbert and Ruth Whitaker Award, Ross School of Business Doctoral Studies Fellowship, Information Systems Executive Forum (ISEF) Fellowship, and Best graduate of KAIST Business School Award.
John Baker, MS Associate Professor	John Baker, Sr., MS (Administrative Science, The Johns Hopkins University) joined the Johns Hopkins Carey Business School in 1999. He is a Lecturer with expertise in the areas of information systems, digital forensics and information security. His teaching Interests Include: Managing Information Systems, Web Site Design & Information Architecture, Web Principles & Web Page Design, Systems Analysis & Design, Information & Telecommunication Systems Architecture, Principles of E-commerce, Information Technology Integration for Business.

The following list consists of part-time faculty who may teach in the modified MSIS program:

Name/Rank/Specialty	Area of Expertise / Research
David V Hillman, MS Adjunct Faculty	David V Hillman, MS, is an Adjunct Faculty member in the Information Systems department. He is an information technologist specializing in software engineering, artificial intelligence, Internet/Web, multimedia, and database technologies. His teaching interest include Operating System and Software Security, Program Design, E-commerce, Operating Systems and File Structures, Systems Analysis, and Database Principles.

Appendix C
Evidence of Compliance with the Principles of Good Practice
(as outlined in COMAR 13B02.03.22C)

(a) Curriculum and Instruction

(i) **A distance education program shall be established and overseen by qualified faculty.**

The online option of the MSIS program proposed here has been developed by the Johns Hopkins Carey Business School Vice Dean for Education and the Academic Program Director in consultation with colleagues at the Johns Hopkins Carey Business School.

Vice Dean and Professor Kevin Frick taught online programs for nearly a decade at the Johns Hopkins Bloomberg School of Public Health prior to joining the Carey Business School faculty and administration. He is involved in the development of the school's online courses and works closely with the head instructional designer who leads the Learning@Carey faculty support office.

William Agresti, Academic Program Director, is a senior lecturer with expertise in managing complex projects and information systems.

The online courses taught in the MSIS program will continue to be offered in the face-to-face format by the same pool of faculty.

(ii) **A program's curriculum shall be coherent, cohesive, and comparable in academic rigor to programs offered in traditional instructional formats.**

The courses that would be offered in the online option of the MSIS program already exist as part of the school's face-to-face part-time MSIS program. The comparability to the programs offered in traditional instructional formats is clear because the courses are taught in both modalities, and the development of courses is designed to assure that the learning experience is sufficiently similar to warrant this type of consideration.

(iii) **A program shall result in learning outcomes appropriate to the rigor and breadth of the program.**

The online option of the MSIS program will allow students to achieve learning objectives that include:

- Understand and master core concepts and methods in the information systems discipline and their application in business practice
- Function effectively in diverse business contexts
- Anchor information systems aspects of business activities in ethics and human values
- Communicate effectively in business settings

(iv) A program shall provide for appropriate real-time or delayed interaction between faculty and students.

Each of the courses includes both asynchronous (delayed) and synchronous (real-time) interaction opportunities. Good online course development attempts to find the optimal combination of these to facilitate the learning objectives. The delayed interaction includes listening to prerecorded lectures and the use of discussion boards (among other opportunities). Each course includes some type of real-time contact with audio coming primarily from (or at least being controlled by) the faculty but with either text or audio options for students who want to actively participate in a real time exchange.

(v) Faculty members in appropriate disciplines in collaboration with other institutional personnel shall participate in the design of courses offered through a distance education program.

The faculty who are designing the courses in the proposed program already are full-time or part-time faculty at the university. Any courses yet to be designed for an online learning experience will utilize the help of instructional designers to maximize their quality.

(b) Role and Mission

(i) A distance education program shall be consistent with the institution's mission.

Refer to section A.1 in the main body of the proposal.

(ii) Review and approval processes shall ensure the appropriateness of the technology being used to meet a program's objectives.

The Carey Business School will utilize Blackboard, a learning management system that has met the test of the market for online course materials. In addition, various technologies will be utilized in facilitating asynchronous and synchronous teaching and learning. The university has a Faculty Advisory Committee on Digital Education charged with guiding the choice of appropriate technologies. This committee is governed by the JHU Provost's office.

(c) Faculty Support

(i) An institution shall provide for training for faculty who teach with the use of technology in a distance education format, including training in the learning management system and the pedagogy of distance education.

Faculty development initiatives including online teaching training and collaboration with instructional designers have been provided to faculty. The Carey Business School offers online courses in the MS in Finance program and a Graduate Certificate in the Business of Health Care. The policies and processes governing the implementation of these programs will be transferred to the online option of the MSIS program especially for the shared business foundation courses.

(ii) Principles of best practice for teaching in a distance education format shall be developed and maintained by the faculty.

The Carey Business School will work to ensure that faculty are aware of best practices in online pedagogy. The instructional design staff within Teaching & Learning@Carey produce workshops for the faculty of the Carey Business School as a whole and work specifically with individual faculty to assure best practices in teaching in all environments. At the university level, the Faculty Advisory Committee on Digital Education led by the Provost's office will have a role in this ensuring best practices as well as assuring appropriate technology as mentioned earlier.

(iii) An institution shall provide faculty support services specifically related to teaching through a distance education format.

The Carey Business School designated the 2015-16 academic year as the Year of Instruction, during which online teaching was a primary focus. Moving forward, the school is committed to the continual offering of online teaching and development programs to the faculty. Some of the teaching development initiatives that the school will implement include, faculty events with expert guest speakers, faculty mentoring from faculty who have previously taught online courses, sponsored development faculty conferences and seminars, software workshops and training, and collaborations with instructional designers and instructions technologists.

(d) An institution shall ensure that appropriate learning resources are available to students including appropriate and adequate library services and resources.

The students will have online access to the Milton S. Eisenhower Library on the Homewood campus, which is ranked as one of the nation's foremost facilities for research and scholarship. Its collection of more than three million bound volumes, several million microfilms, and more than 13,000 journal subscriptions has been assembled to support the academic efforts of the University. The interlibrary loan department makes the research collection of the nation available to faculty and students. The library also provides easy access to a wide selection of electronic information resources, including the library's online catalog, and numerous electronic abstracting and indexing tools. Many of the databases are accessible remotely. Librarians help students electronically and the library maintains an extensive web site to take visitors through all of its services and materials.

(e) Students and Student Services

(i)   A distance education program shall provide students with clear, complete, and timely information on the curriculum, course and degree requirements, nature of faculty/student interaction, assumptions about technology competence and skills, technical equipment requirements, learning management system, availability of academic support services and financial aid resources, and costs and payment policies.

All such information will be provided to students as part of the marketing for and description of the program. While much of the activity will be asynchronous, all of the courses are expected to include interaction by discussion board, interaction by faculty evaluation of student work in various forms, and some live sessions during the class. The learning management systems will be identified for students and the hardware requirements will be clarified, as will academic support services (see below), financial aid resources, and costs and payment policies.

(ii)   Enrolled students shall have reasonable and adequate access to the range of student services to support their distance education activities.

Academic Advising. Students are assigned an advisor at the Carey Business School when accepted. Students work individually with the advisor to develop a course of study that meets the requirements of the program and the career goals of the student, although with only six courses for twelve credits the amount of choice will be limited. There is regular communication between the advisor and the students to check on progress and answer questions. Courses that deviate from the program plan and have not been approved by an adviser may not count toward degree requirements. A degree audit tool is provided so students verify their selections match degree requirements.

Library Services. Students have online access to the Milton S. Eisenhower Library on the Homewood campus, ranked as one of the nation's foremost facilities for research and scholarship. The interlibrary loan department allows students access to resources at any other university in the nation. The library also provides easy access to a wide

selection of electronic information resources, including the library's online catalog, and numerous electronic abstracting and indexing tools. Many of the databases are accessible remotely. Librarians are available to assist students remotely and the library maintains an extensive web site to take visitors through all its services and materials.

Services with Students with Disabilities. The Johns Hopkins University is committed to making all academic programs, support services, and facilities accessible to qualified individuals. Students with disabilities who require reasonable accommodations can contact the Assistant Director of Student Activities in the Carey Business School.

Johns Hopkins Student Assistance Program. The Johns Hopkins Student Assistance Program (JHSAP) is a professional counseling service that can assist students with managing problems of daily living. Stress, personal problems, family conflict, and life challenges can affect the academic progress of students. JHSAP focuses on problem solving through short-term counseling. Accessing the service is a simple matter of a phone call to arrange an appointment with a counselor. Online students may call a phone number for consultation and will be directed to the appropriate resource or office. JHSAP services are completely confidential. The program operates under State and Federal confidentiality legislation and is HIPAA compliant.

Transcript Access. Official transcripts will be mailed upon written request of the student at no charge.

Student ID JCard. The JCard serves as the student's University identification card. This card is mailed to the home address of every registered student. The JCard acts as the university library card, which enables students to check out books from the Homewood Eisenhower Library or at any of the campus center libraries, and provides access to many computer laboratories.

(ii) **Accepted students shall have the background, knowledge, and technical skills needed to undertake a distance education program.**

The learning management system used by the Carey Business School is user friendly. Students who enroll in the online option of the Master of Science in Information Systems program will have demonstrated the technical skills necessary to succeed in a distance education program. Admissions materials emphasize the self-discipline required to succeed in a program that does not have formal class meeting times but requires the student to work at his or her own pace.

(iii) **Advertising, recruiting, and admissions materials shall clearly and accurately represent the program and the services available.**

In the Carey Business School, the marketing staff work directly with academic program managers and the faculty academic program directors to understand the courses and programs of study in order to develop informative and accurate marketing materials.

(f) Commitment to Support

(i) Policies for faculty evaluation shall include appropriate consideration of teaching and scholarly activities related to distance education programs.

The Carey Business School treats teaching an online course the same as teaching a course face-to-face. Distance education programs are considered an essential part of the scholarly activities for faculty at the school. At the Carey Business School, each course has the option to conduct a mid-term course evaluation. The mid-term evaluation is anonymous but the results are shared with the faculty prior to the end of the course for the purposes of correction as necessary. If there is a need for correction, the instructional design staff in Teaching & Learning@Carey and other faculty can be brought to interact with the faculty. For online courses, the interaction would be to review discussion board interaction, to attend a live session that is being held, and then to review the application of the grading rubric. In addition, an end of course evaluation is also conducted. The results are reviewed by the Director of Teaching & Learning@Carey as well as by the Vice Dean for Education and the Vice Dean for Faculty and Research. The results are used to improve the course offerings in the future and to determine whether part-time faculty are to be rehired and how to target interventions for full-time faculty.

(ii) An institution shall demonstrate a commitment to ongoing support, both financial and technical, and to continuation of a program for a period sufficient to enable students to complete a degree or certificate.

Please see sections J and K of the proposal.

(g) Evaluation and Assessment

(i) An institution shall evaluate a distance education program's educational effectiveness, including assessments of student learning outcomes, student retention, student and faculty satisfaction, and cost-effectiveness.

Each course will be subject to a course evaluation and the grade distribution will be assessed. The Carey Business School will also keep a record of the number of students who complete the program and those who do not. For those who withdraw, the courses they have and have not taken toward the completion of the certificate will be tracked. The evaluation will also include an assessment of faculty and student satisfaction via exit interviews for the students and regular meetings for the faculty to understand what is working well and what improvements might be necessary.

(ii) An institution shall demonstrate an evidence-based approach to best online teaching practices.

The Carey Business School has multiple rubrics to choose from for evaluating the quality of online courses including: the Quality Matters and Sloan-C rubrics. At the university level, the Faculty Advisory Committee on Digital Education provides additional insight on these issues.

(iii) **An institution shall provide for assessment and documentation of student achievement of learning outcomes in a distance education program.**

Learning objectives are consistent with those of the face-to-face Master of Science in Information Systems program (see section B.2 of the main proposal). The evaluations that will be used can include participation in online discussion boards, presentations, papers, and multiple choice questions, among other means. Each of these can be used to judge whether students have met the learning objectives and planned learning outcomes for the course. The learning management system makes it possible to save and document the results over time.

Appendix D
Finance Information

TABLE 1: RESOURCES					
Resource Categories	2018	2019	2020	2021	2022
1. Reallocated Funds					
2. Tuition/Fee Revenue (c + g below)	$977,902	$1,913,947	$ 2,566,724	2,936,083	3,029,775
a. Number of F/T Students	-	-	-	-	-
b. Annual Tuition/Fee Rate	$53,931	$55,549	$57,215	$58,932	60,700
c. Total F/T Revenue (a x b)	-	-	-	-	-
d. Number of P/T Students	99	99	168	211	232
e. Credit Hour Rate	$1,118	$1,152	$1,187	$1,222	$1,259
f. Annual Credit Hours	14	14	14	14	14
g. Total P/T Revenue (d x e x f)	$977,902	$1,913,947	$2,566,723	$2,936,082	$3,029,775
3. Grants, Contracts & Other External Sources	-	-	-	-	-
4. Other Sources	-	-	-	-	-
TOTAL (Add 1 – 4)	$977,902	$1,913,947	$2,566,724	$2,936,083	$3,029,775

Resources narrative
1. Reallocated Funds. No funds will be reallocated from existing campus resources.
2. Tuition/Fee Revenue. Tuition revenue is the product of the incremental number of P/T students, the credit hour rate, and the total annual credit hours. In addition, each new student is charged a $500 matriculation fee upon entering the program.   For AY 2017, the rate per credit hour is $1,290. We estimate the rate to be $1,316 in FY18. An average of 15% discount is granted through student aid, yielding $1,118. It is anticipated that this rate will increase by 2% per year through 2022. The average student completes 14 credit hours (7 courses) per year.
3. Grants and Contracts. There are no grants or contracts that will provide resources for this program.
4. Other Sources. Not applicable.

Expenditure Categories	2018	2019	2020	2021	2022
TABLE 2: EXPENDITURES:					
1. Faculty (b + c below)	$534,660	$1,039,057	$1,339,207	$1,518,716	$1,549,090
a. # Sections offered	18.5	36.5	48.0	53.4	53.4
b. Total Salary	$399,000	$775,416	$999,408	$1,133,370	$1,156,038
c. Total Benefits	$135,660	$263,641	$339,799	$385,346	$393,053
2. Admin. Staff (b + c below)	$33,500	$51,255	$69,707	$88,876	$108,784
a. # FTE	0.5	0.75	1	1.25	1.5
b. Total Salary	$25,000	$38,250	$52,020	$66,326	$81,182
c. Total Benefits	$8,500	$13,005	$17,687	$22,551	$27,602
3. Support Staff (b+c below)	$30,263	$51,446	$69,967	$89,208	$109,190
a. # FTE	0.5	0.75	1	1.25	1.5
b. Total Salary	$22,500	$38,250	$52,020	$66,326	$81,182
c. Total Benefits	$7,763	$13,196	$17,947	$22,882	$28,008
4. Equipment	$10,000	$10,000	$10,000	$10,000	$10,000
5. Library	$144,217	$142,659	$245,214	$324,643	$357,940
6. New or Renovated Space	-	-	-	-	-
7. Other Expenses	$323,900	$309,700	$345,550	$392,700	$432,900
TOTAL (Add 1 – 7)	**$1,076,539**	**$1,604,118**	**$2,079,645**	**$2,424,143**	**$2,567,905**

Expenses narrative

1. Faculty Salaries and Benefits. The number of incremental sections is computed from the incremental student body, with each student taking 7 sections per year. The Carey School's average class size of 30 is used to determine the number of incremental sections that will be required. Faculty cost per section is computed based on the % of faculty salary attributed to teaching multiplied by total faculty base salaries and then divided by the total number of sections to be taught. This number increases by 2% per year. Benefits are added to the salary cost using the Johns Hopkins standard multiplier of 34%

2. Administrative Staff. This includes salaries for administrative staff members, including academic advisors, career advisors and instructional designers, increasing by 2% per year.

3. Support Staff. This includes salaries for Help desk, technical staff, and administrative support staff members, increasing 2% per year.

4. Equipment. Because these incremental courses are online, the school will incur costs related to hosting and managing the courses in an online setting.

5. Library. The school pays for library services at an average rate of $1,500 per student. This rate is expected to remain constant over this planning horizon.

6. New or Renovated Space. There are no physical space requirements associated with modification of the existing MSIS program for online delivery.

7. Other Expenses. The school will expend money to build and refine online courses for the MSIS program over the entire planning horizon. Other expenses also include costs associated with marketing the new online option of the MSIS.