

MARYLAND HIGHER EDUCATION COMMISSION  
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**

\_\_\_\_\_  
Award to be Offered

**0506-03**

\_\_\_\_\_  
Suggested HEGIS Code

**Enterprise Risk Management**

\_\_\_\_\_  
Title of Proposed Program

**52.0201**

\_\_\_\_\_  
Suggested CIP Code

**Carey Business School**

\_\_\_\_\_  
Department of Proposed Program

**Bernard Ferrari, Dean**

\_\_\_\_\_  
Name of Department Head

**Natalie Lopez**

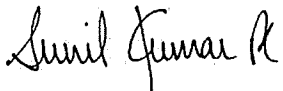
\_\_\_\_\_  
Contact Name

**alo@jhu.edu**

\_\_\_\_\_  
Contact E-Mail Address

**(410) 516-6630**

\_\_\_\_\_  
Contact Phone Number



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Signature and Date

**1/9/2017**

\_\_\_\_\_  
President/Chief Executive Approval

**n/a**

\_\_\_\_\_  
Date

\_\_\_\_\_  
Date Endorsed/Approved by Governing Board

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

**Master of Science in Enterprise Risk Management**

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**A. Centrality to institutional mission statement and planning priorities**

**1. Program Description and Alignment with Mission**

The Johns Hopkins University (JHU) Carey Business School is pleased to submit a proposal to substantially modify the existing and previously endorsed Master of Science in Enterprise Risk Management (MSERM) (HEGIS code 050603; CIP code 520201) to create curricular changes and offer an online option. The Master of Science in Enterprise Risk Management has been fully endorsed by Maryland Higher Education Commission and the JHU Carey Business School has offered it since 2014.

The Master of Science in Enterprise Risk Management (MSERM) program is designed to develop leaders with the skills to increase, conserve, and protect assets. The program prepares managers to develop, evaluate, and implement strategic contingency plans, and to effect quick recovery from disruptions. The program empowers leaders to make informed and thoughtful decisions in a crisis, and to take full advantage of opportunities whenever they arise.

The proposed modification would create an online option in the existing Master of Science in Enterprise Risk Management program, enabling the program and existing areas of concentration to be delivered via distance education; and modify the courses to ensure students in the modified (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 Masters of Science in Enterprise Risk Management 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**

Johns Hopkins University has long history of teaching business courses to professionals including Risk Management professionals around the world. The MSERM curriculum was revised to respond to market conditions and align with the renewed mission of the school. The overarching goal of the program is to prepare students for careers in business analytics and risk management.

In addition to a solid foundation in quantitative skills, the program also equips students with concepts and theories about the role of the board of directors, management and shareholders in protecting enterprise value by managing the downside of risk, agency theory, information asymmetry, and the resolution of conflict of interest between management and shareholders. All of which aligns 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 (18 credits)**

- BU.210.620 Accounting and Financial Reporting
- BU.120.601 Business Communication
- BU.131.601 Business Leadership and Human Values
- BU.231.620 Corporate Finance
- BU.132.601 Business Law
- BU.520.601 Decision Models
- BU.350.620 Information Systems
- BU.510.601 Statistical Analysis
- BU.680.620 Operations Management

#### **Functional Core (6 credits)**

- BU.510.650 Data Analytics
- BU.520.620 Optimization Models
- BU.610.625 Simulation and Strategic Option

#### **Elective Courses (students select a minimum of 12 credits)**

- BU.231.720 Corporate Governance
- BU.610.705 Crisis Management
- BU.330.730 Cybersecurity

- BU.230.750 Financial Crises and Contagion
- BU.610.750 Global Supply Chain Management
- BU.300.620 Managing Complex Projects
- BU.610.730 Supply and Service Contracting
- BU.610.720 Business and Political Economy
- BU.610.630 Insurance and Risk Management
- BU.330.780 Data Science and Business Intelligence
- BU.520.701 Special Topics in Risk Management

Business Foundation courses are a subset of the course offerings which 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. The Special Topics course is used to introduce new material and has been used annually to cover new topics which may be added to the program on a permanent basis as needed.

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:

- Be prepared for employment as a financial manager, business analyst, data analyst, financial analyst, logistics manager, and other roles in public, private, and government organizations domestically and internationally.
- Demonstrate knowledge and skills in risk assessment, decision making during crises, and planning and execution of resiliency strategies.
- Be able to utilize managerial competency in both security and resiliency of the enterprise.
- Contribute to development and expansion of the growing field of Enterprise Risk Management.

## **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.”<sup>1</sup>

In turn, the MSERM program, modified for online delivery, will immerse students in a curriculum that develops managers and leaders with the knowledge and skills to anticipate and manage risk, while leveraging unique opportunities in challenging environments. 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**

The MSERM 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 MSERM 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").

Considering the projected demand for well-educated and qualified risk management professionals to address the new and future challenges of government and corporate risk management, 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<sup>1</sup>**

The U.S. Bureau of Labor Statistics combines risk managers with other categories of financial managers and predicts that by the year 2024, the need for financial managers will increase in various industries<sup>2</sup>. This translates to a significant need for educational institutions to train professionals to be able to create and implement risk management strategies critical to successful business operations. The Carey Business School's MSERM program is well suited to meet this growing need.

The Bureau of Labor Statistics (BLS) Occupational Outlook Handbook suggests that there were 555,900 financial manager positions in 2014 and predicts a projected growth of 7% by 2024. This is an employment change of 37,700 jobs in a 10-year period.<sup>2</sup> The MSERM program will meet this demand for a workforce with the skills to increase, conserve, and protect assets.

Students graduating from the MSERM program will also have the opportunity to pursue careers as financial analysts<sup>2</sup>, management analysts<sup>3</sup>, operations research analysts<sup>4</sup>, and emergency management directors<sup>5</sup>. 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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<sup>1</sup> <http://www.bls.gov/ooh/management/financial-managers.htm>

<sup>2</sup> <http://www.bls.gov/ooh/business-and-financial/financial-analysts.htm>

<sup>3</sup> <http://www.bls.gov/ooh/business-and-financial/management-analysts.htm>

<sup>4</sup> <http://www.bls.gov/ooh/math/operations-research-analysts.htm>

<sup>5</sup> <http://www.bls.gov/ooh/management/emergency-management-directors.htm>

Table 1 represents the projected job growth in occupations related to Enterprise Risk Management.

**Table 1. Estimated Job Growth in Finance, Management, Operations Research, and Emergency Management, 2014-2024**

Occupational Title	Employment, 2014	Change, 2014-2024	Projected Employment, 2024
Financial Managers	555,900	7%	593,500
Financial Analysts	277,600	12%	310,000
Management Analysts	758,000	14%	861,400
Operations Research Analysts	91,300	30%	118,900
Emergency Management Directors	10,500	6%	11,200

The MS in Enterprise Risk Management is designed to draw candidates from both the public and private sectors. For the public sector, the Carey Business School is well positioned geographically to offer this MSERM program to professionals and leaders within Federal Government Operations. Table 2 details the estimates of the personnel employed at government institutions focused on national safety and security issues:

**Table 2. Defense and Security Government Agency Employers**

Agency	Location	Employees
Department of Defense	Pentagon, Washington, D.C	742,000 Civilian Employees <sup>6</sup>
Department of Homeland Security	Washington, D.C.	240,000 <sup>7</sup>
Central Intelligence Agency	Washington, D.C.	Classified; Estimate: 15,000
National Security Agency	Fort Meade, Maryland	Classified; Estimate 40,000
Federal Bureau of Investigation	Washington, D.C.	35,000 <sup>8</sup>
Department of Energy	Washington, D.C.	16,100 <sup>9</sup>
National Aeronautics and Space Administration	Washington, D.C.	18,000 <sup>10</sup>
Department of State	Washington, D.C.	69,000 <sup>11</sup>
	<b>Total:</b>	<b>Estimate 1,175,100</b>

<sup>6</sup> <http://www.defense.gov/About-DoD/dod101>

<sup>7</sup> <https://www.dhs.gov/about-dhs>

<sup>8</sup> <https://www.fbi.gov/about/faqs/how-many-people-work-for-the-fbi>

<sup>9</sup> [http://fire.pppl.gov/doe\\_fy05\\_energy\\_overview.pdf](http://fire.pppl.gov/doe_fy05_energy_overview.pdf)

<sup>10</sup> <https://www.nasa.gov/audience/forstudents/5-8/features/nasa-knows/what-is-nasa-58.html>

<sup>11</sup> <https://careers.state.gov/learn/what-we-do/mission>

Considering that a significant portion of these positions is located in the greater Washington, D.C. metro area, the MS in Enterprise Risk Management provides a convenient opportunity for government employees working in security and defense to build their management expertise in these sectors. One sector of anticipated growth in defense security is in the cybersecurity sector.

In addition to large number of government institutions, private financial institutions like Chevy Chase Bank, Legg Mason, T Rowe Price, Exelon, Maryland is a thriving market of institutions that need professionals with enterprise risk management training.

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 Enterprise Risk Management program. Overall inquiries have significantly increased. Table 3 shows the inquiries and enrollments from 2014/15-2016/17 to the programs with focus on enterprise risk management.

**Table 3. Inquiries and Enrollments from 2014/15-2016/17 to the Programs with Focus on Enterprise Risk Management**

Academic Year	Inquiries for the programs with focus on ERM	Growth %	Enrolled FT
2014/15	305	n/a	15
2015/16	752	146.5%	27
2016/17	966	28.5%	39

The demand from prospective students to the Carey Business School’s academic offerings in enterprise risk management and the enterprise risk management concentration in the MBA program has been increasing. Based on this data, as well as individual and group discussions with current students, the school is modifying the curriculum to add online and hybrid options of program delivery.

Much of the growth in demand from students for MS programs has been concentrated in the area of Analytics. This content is enveloped with the MSERM program. In particular, this program equips students for a variety of jobs including Data Analyst, Research Data Analyst, Big Data Analyst, Data Scientist, and Business Analyst. These same skills are also in high demand for related positions as Marketing Data Analyst, Underwriting Analyst, and Digital Business Analyst. The growth in these areas of the job market is explosive and many groups including Gartner report<sup>12</sup>that demand is dramatically exceeding supply and should continue to do so in the near future.

<sup>12</sup> [https://www.gartner.com/doc/3090420?srcId=1-3132930191&cm\\_sp=gi\\_-anlt\\_-srpage](https://www.gartner.com/doc/3090420?srcId=1-3132930191&cm_sp=gi_-anlt_-srpage)



## **2. Educational and Training Needs in the Region**

Based on the projected growth in public and private sector enterprise risk management opportunities—such as cybersecurity and risk management officers—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 Enterprise Risk Management program. The expectation is that graduates of the program will go on to serve in managerial and leadership positions in corporations, government security departments, supply chain and logistics companies, and other domestic and international organizations facing growing security and risk management concerns.

The Maryland Department of Labor, Licensing and Regulation (DLLR) projects a growth in various management of companies and enterprises positions that students graduating from the MSERM program would potentially hold<sup>13</sup>. Table 4 provides a snapshot of the projected occupational growth from 2014-2024.<sup>14</sup>

## **3. Prospective Graduates**

The full time enrollment has advanced from 17 to 28 to 39 students. Over the next three years, we plan to enroll approximately 50, 75, and 100 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, five schools currently offer Master’s programs broadly related to security management careers.

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

- Towson University
  - MS Integrated Homeland Security Management
- University of Baltimore
  - MS Global Affairs and Human Security
- University of Maryland, College Park
  - Master of Public Policy with specialization in International Security and Economic Policy
- University of Maryland, College Park
  - Master of Finance
  - MS in Business Analytics

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<sup>13</sup> <http://www.dllr.state.md.us/lmi/iandoproj/maryland.shtml>

<sup>14</sup> <http://www.dllr.state.md.us/lmi/iandoproj/maryland.shtml>

- University of Maryland University College:
  - MS Cybersecurity Management and Policy
  - MS Management, Homeland Security Management
  - MS Management: Emergency Management
  - MS Management: Financial Management

Distinct from the programs listed above, the proposed MS in Enterprise Risk Management is intended to deliver a comprehensive assessment of risks posed to both private and public enterprises and develop skills and expertise enabling professionals to address multi-dimensional threats and develop more resilient organizations.

The key distinguishing factors for the MS in Enterprise Risk Management include a multidisciplinary approach required for management training, a focus on both private and public institutions, and the program's grounding in modeling complex systems and quantitative capabilities. With its focus on data analytics, the program prepares students to gather, describe, and analyze data, using statistical tools to support operations, risk management, and response. Program analysis targets economic and financial decisions in complex systems utilizing probability, statistics, hypothesis tests, experimentation, and forecasting. These courses develop students' decision making skills beyond theoretical frameworks. Coursework focusing on optimization and simulation models develops candidates' capability to deal with multi-dimensional uncertainty and examine the impact's "unknown threats" to organizations and systems. Faculty will utilize Monte Carlo Simulation, Discrete Event Simulation, and Scenario Planning to illuminate these risk management techniques under a variety of threats.

The University of Maryland University College's MS in Emergency Management program addresses both private and public sector concerns; however, its curriculum focuses on the management of emergency situations, rather than developing organizational leaders that provide guidance through various multidimensional threats under different timeframes. The University of Baltimore's MS Global Affairs and Human Security program focuses its coursework on humanitarian, non-governmental organizations, and social causes rather than multidimensional threats to institutions. Instead of courses addressing threat analysis and response strategy, the Global Affairs and Human Security program offers course work in "international issues related to good governance, sustainable development, transnational problem-solving and the promotion of human security."<sup>15</sup>

Towson University's MS in Integrated Homeland Security Management and University of Maryland University College's MS in Homeland Security Management are more closely associated with the Carey Business School's Enterprise Risk Management program but differ in significant areas. Although Towson University's MS in Integrated Homeland Security Management program appeals to both private and public sector employees, its private sector focus is centered on corporations' integration with the US Homeland Security operations. Carey's Enterprise Risk Management program, with its robust course load reflecting data analytics, stresses managers' abilities to independently

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<sup>15</sup> <http://www.ubalt.edu/cpa/graduate-programs-and-certificates/degree-programs/global-affairs-and-human-security/>

recognize, assess, and act in the face of multidimensional threats distinct from Homeland Security's operations. Additionally, Towson University's program is offered only online; whereas Carey's MS in Enterprise Risk Management is delivered online and at its Baltimore and DC Campuses. University of Maryland University College's MS in Homeland Security Management delivers content for both public and private sector employees regarding various operational threats; however, as a specialized option in a management graduate degree, the program more broadly addresses multidimensional threat response than Carey's MS in Enterprise Risk Management program. Since Carey's program is a focused master's degree in Enterprise Risk Management, it is able to devote more coursework to analytic skills lacking in the University of Maryland University College's program.

University of Maryland College Park's Master in Finance, offers option to specialize in risk management however the program offers only knowledge about corporate risk management, which doesn't provide broad knowledge on analyzing risk and managing crisis as Carey Business School MSERM program does. Another similar program at University of Maryland College Park, Master in Business Analytics is more aligned with Carey's MSERM program. The program curriculum focusses heavily on data analysis, mathematical and statistical knowledge, but fails to prepare students to manage financial risk and handle financial crisis. Carey Business School MSERM program addresses those topics as well.

Most of Master of Science programs offered in State of Maryland have program requirement of 30 credits and are delivered in traditional face-to-face campus-based instruction, with exception of Towson University which offers online based MS in Integrated Security Management program. Johns Hopkins Carey Business School's MSERM program will be offered face-to-face, online, or as a combination of both, in a hybrid modality.

## **2. Program Justification**

Globalization of business increasingly exposes public and private enterprises to risks and dynamics not fully explored in existing programs offered by business schools. Such problems as natural disasters, pandemics, economic contagions, cyberattacks and regime changes impact private and public enterprises and can deteriorate the organization's assets. The proposed MS in Enterprise Risk Management is designed to examine these issues with more focus on analytics than existing business schools' programs.

The program is designed utilizing a multidisciplinary approach to build an understanding of Design and Management Principles for:

- Increased Resilience: Ability to return to normal function after adverse events
  - Contingent Organizational Structures
  - Leadership and crisis management
  - Pre-event planning, and post-event execution
- Increased security: Reduction of a threat's potential impact on Operations
  - Identification
  - Assessment
  - Preparedness

The key characteristics of the proposed MS in Enterprise Risk Management include:

- Grounded on analytical modeling of complex systems
- Focuses on the management philosophies that support resiliency and security
- Draws on expertise from public, corporate, governmental, and academic sectors

There are a number of distinguishing factors in the proposed program that will make it attractive to prospective MS candidates. One factor of the program is its target audience. The MS in Enterprise Risk Management program appeals to candidates involved in many public and private industries and sectors. In addition to attracting students from government defense and security sectors, the program will also interest professionals in a variety of private industries, from financial firms to humanitarian organizations, with multi-dimensional risks concerns.

The target audience for the program includes:

- Students seeking entry and advancement in organizations facing multi-dimensional risks
- Executives called upon to provide leadership over global systems subject to international threats
- Employers needing a workforce ready to respond and thrive in the most uncertain environments
- Protection and recovery of core assets
- Product and service delivery after disruptions
- Agencies focused on response and recovery
- Suppliers to military and government agencies

The program will incorporate topics such as Supplies and Service Contracting, Global Supply Chain Management, and Managing Complex Projects that are critical to any business operating in the global modern marketplace. The MS program includes these perspectives to appeal to a diverse candidate base.

Another distinguishing factor that will appeal to candidates is the program's grounding in modeling complex systems and quantitative capabilities. With its focus on data analytics, the program prepares students to gather, describe, and analyze data using statistical tools

to support operations, risk management, and response. 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.

This document proposes to modify the document 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)**

Not Applicable. Based on the degree offerings currently available at the Historically Black Institutions (HBIs) of the state of Maryland, none of these institutions offers the program with a similar focus and content.

#### **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 at 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, advise, or serve on the curriculum committees in the Master of Science in Enterprise Risk Management program. Each has earned a doctoral degree, 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 Enterprise Risk Management. 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 Finance 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 new Master of Science in Enterprise Risk Management 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 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): 18 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.210.620 Accounting and Financial Reporting**

This course emphasizes the vocabulary, methods, and processes by which business transactions are communicated. Topics include the accounting cycle; basic business transactions involving assets, liabilities, equity, account revenue, and expense; as well as preparation and understanding of financial statements, including balance sheets, statements of income, and cash flows.

##### **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 MS IS students. MS IS 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.132.601 Business Law**

A thorough working knowledge of the legal and regulatory environment in which businesses operate is essential for well-prepared business executives. This course provides an overview of the legal and regulatory environment affecting business in the U.S. and abroad. Topics include forms of business organization, contracts, torts and product liability, international business transactions, ethics, antitrust law, environmental law, securities regulation, and discrimination and employment issues. Students are expected to utilize library and Internet resources to complete assignments.

**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.

**BU.231.620 Corporate Finance**

This course is designed to introduce students to the basic, yet fundamental, issues of modern finance. The goal of the course is to provide students with the basic tools needed to successfully complete more advanced finance courses. This course deals primarily with a firm's investment and financing decisions and its interactions with the capital markets. Students are taught the fundamental principles of financial valuation and analysis, which provide a solid foundation for all other finance courses.

**Functional Core (required courses): 6 credit hours****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.520.620 Advanced Business Analytics**

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.610.625 Simulation and Strategic Options**

This course covers aspects of spreadsheet models, Monte Carlo Simulation, contingent claims analysis, and scenario planning to formalize the concept of real options as a framework for thinking through contingencies and strategic decisions made in the presence of risk. It uses the logic of options pricing, decision trees, and decision analysis to position the manager to deal with risks embedded in the use of real assets. Emphasis will be placed on taking advantage of the upside of risks, and the application of rigorous approaches to thinking through “optionality” in the real world.

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

**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.610.730 Supply and Service Contracting**

This course explores fundamental drivers of human and system behavior embedded in business contracts. These drivers include alignment of incentives for performance and information sharing, provisions for recourse in the face of unsatisfactory performance, and the design of options to facilitate the pursuit of opportunities that arise after contract terms are set. All topics are viewed from both the supplier’s and the customer’s perspectives. Emphasis will be placed on using contracts to share or minimize risks in global networks.

**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.

**BU.230.750 Financial Crisis and Contagion**

This course takes students through the last 30 years of financial bubbles, manias and scandals in the U.S., from the thrift crisis of the 1980s, to the Long-Term Capital Management and Enron debacles, to the recent mortgage meltdown and Great Recession. Examining the upheavals of these three decades is key to understanding how the landscape and laws of modern financial markets evolved and where they might be headed.

**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.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.230.730 Managing Financial Risk**

This course offers an introduction to financial risk management. Risk management is a complex process of identifying, measuring, and controlling risk exposure. The course will balance theory and practical application. Topics include market and credit risks, liquidity, and operational and legal risks, including volatility modeling, and derivatives as tools for controlling risk. Using modern econometric models, such as ARCH and GARCH, along with widely used quantitative methods (Monte Carlo simulation and Filtered Historical simulation), the course will describe how to measure and control risk exposure towards various types of risks, especially market and credit risk.

### **BU. 610.630 Insurance and Risk Management**

This course will examine the way in which business and society make assessments of, control and transfer risk. Topics covered will include identification of risks, selection of strategies to manage those risks, implementation of selected strategies, management and monitoring results. Emphasis will be placed on the use of insurance instruments in such strategies.

### **BU. 330.780 Data Science and Business Intelligence**

This course introduces principals and frameworks that guide extracting business insights from data to generate competitive advantage. Extends Data Analytics toolkit and applies tools to solve business problems. Emphasis is on cases, applications and strategy.

### **BU.231.720 Corporate Governance**

The value of a firm depends on corporate governance practices that protect the investor. Greater investor protection lowers the cost of capital. Thus, the set of governance practices, rules and regulations that promote private sector development also promote firm value. Topics include corporate pyramidal structures, hostile takeovers and the failure of the market for corporate control, mutual fund governance, executive compensation policies, boardroom structure and practices, corporate transparency and the value of the shareholder vote.

**Appendix B  
Representative Faculty**

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

Name/Rank/Specialty	Area of Expertise / Research
<p>Phil Phan, PhD Professor</p>	<p>Phillip Phan, PhD, is a Professor in the research track with expertise in the areas of corporate governance and technological entrepreneurship. His teaching interests include Technology &amp; Comp Advantage, Corporate Governance and Strategic Management Theory Seminar.</p> <p>Professor Phan has been published and has served as the editor or associate editor in the following publications: Journal of Business Venturing; Journal of Financial Stability; Journal of Technology Transfer; Academy of Management Journal, and many others. Among Prof. Phan's honors and awards: The Stephan Schrader Best Paper Award, for the paper "Scientists or entrepreneurs: Rent (mis)appropriation from discoveries made in university labs." Academy of Management, Technology &amp; Innovation Management Division, Philadelphia, Pennsylvania (2007).</p> <p>Prof. Phan teaches courses on Strategic Management, Corporate Governance and Regulation, and Innovation for Humanity.</p>
<p>Maqbool Dada, PhD Professor</p>	<p>Maqbool Dada, PhD, is a Professor in the research track with expertise in the areas of operations management, supply chain management and pricing models. His teaching interests are International Operations Management, Management of Service Operations and Operations Strategy.</p> <p>Professor Dada has served in associate editorships roles in the following journals: received the following honors and distinctions: Production and Operations Management; Decision Sciences; Management Science; Manufacturing &amp; Service Operations; Management.</p> <p>Prof. Dada teaches courses in Managerial Decision Making, Supply Chain Management and Process Improvement.</p>
<p>William Agresti, PhD Professor</p>	<p>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</p>

Name/Rank/Specialty	Area of Expertise / Research
	<p>Discovery Informatics, Economics of Information Security</p> <p>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.</p>
<p>Ravi Aron, PhD Associate Professor</p>	<p>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.</p> <p>His teaching interests are Emerging Frontiers in Healthcare Technology, Health Care Information Systems, Information Technology &amp; Strategy, Research Seminar on Technology Enabled Businesses &amp; Strategies in Emerging Market Contexts, and Digital Marketplaces.</p>
<p>G. Reza Djavanshir, DSc Associate Professor</p>	<p>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 &amp; 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.</p>
<p>Chester Chambers, PhD Assistant Professor</p>	<p>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.</p>
<p>Stacey Lee, JD Assistant Professor</p>	<p>Stacey Lee, JD, is an Assistant Professor in the practice track with expertise in the areas of business law, ethics and social responsibility. Her teaching interests include Negotiation and Mediation, Legal Issues in Medicine and Business Law. Professor Lee has been a recipient of the Greenwall Fellowship Program in Johns Hopkins Berman Institute of</p>

Name/Rank/Specialty	Area of Expertise / Research
	Bioethics and Health Policy; has been selected as Health Law Scholar by the American Society Law Medicine & Ethics and the Saint Louis University Center for Health Law Studies.
Mitsukuni Nishida, PhD Assistant Professor	Mitsukuni Nishida, PhD, is an Assistant Professor in the Research Track with expertise in the areas of industrial organization and applied econometrics. His teaching interests include Industrial Organization, Business Strategy and Econometrics. Professor Nishida has been a recipient of the Dissertation Fellowship, the Center of East Asian Studies, University of Chicago; The Joint Japan/ World Bank Scholarship and NET Institute Research Grant.
Ozge Sahin, PhD Assistant Professor	Ozge Sahin, PhD, is an Assistant Professor in the research track with expertise in the areas of pricing and revenue management, and supply-chain management. Her teaching interests include Pricing and Revenue Management, and Supply-Chain Management.
Bonnie Robeson, PhD Lecturer	Bonnie Robeson, PhD, is a Lecturer with expertise in the area of entrepreneurship in biotechnology. Her teaching interests are Statistics for Business, Quantitative Analysis for Decision Making, Business Side of Life Science, Strategies for Leading and Managing in a Life Science Organization.
Louise Schiavone Lecturer	<p>Louise L. Schiavone is a lecturer with a specialty in communications. Her teaching interests include Business and Crisis Communications, Communications in a changing media environment and Effective self-presentation.</p> <p>Among awards and honors received by Louise Schiavone are following: Edward R. Murrow Award, ABC Radio, Live Coverage "The Shootings at Virginia Tech"; and Emmy Nomination, Lou Dobbs Tonight, "War on The Middle Class".</p>
Thomas Crain, ABD Lecturer	Thomas Crain, ABD, is a Lecturer with expertise in the areas of communications and ethics. His teaching interests are Ethics Leadership Theory, Rhetoric and Cross-cultural Communications and Economic and Social History of Baltimore.
Jonathan Links, PhD Professor	Jonathan M. Links, Ph.D. is a tenured Professor of Environmental Health Sciences in the Johns Hopkins Bloomberg School of Public Health, with joint professorial appointments in Health Policy and Management in the School of Public Health, Radiology and Emergency Medicine in the

Name/Rank/Specialty	Area of Expertise / Research
	School of Medicine, Public Safety Leadership in the School of Education, Civil Engineering in the Whiting School of Engineering, and Business in the Carey Business School. His is teaching ERM Frameworks, and Crisis Management courses.
<p>Arnab Bisi, PhD Assistant Professor</p>	<p>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.</p> <p>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.</p>
<p>Tinglong Dai, PhD Assistant Professor</p>	<p>Tinglong Dai, PhD, joined the Johns Hopkins Carey Business School in 2013. He is an Assistant Professor in the research track with expertise in the areas of Healthcare Operations Management, Marketing-Operations Interfaces, and Operations Research/Computer Science Interfaces. His teaching interests include Operations Management, Supply and Service Contracting, Healthcare Operations.</p>
<p>Jim Kyung-Soo Liew, PhD Assistant Professor</p>	<p>Jim Kyung-Soo Liew, Ph.D. joined the Johns Hopkins Carey Business School in 2012. He is an Assistant Professor with expertise in the areas of finance, quantitative finance, and hedge funds. His teaching interests include Big Data Machine Learning, Derivatives, Entrepreneurial Finance, Fixed Income, hedge fund Strategies, and Wealth Management. His professional accomplishments include: Journal of Portfolio Management Editorial Advisory Board Member, Chairman of NYU Stern Hedge Fund Association, Outstanding Teaching Assistant Award at Columbia Business School, 1996.</p>
<p>Sanghee Lim, PhD Assistant Professor</p>	<p>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</p>

Name/Rank/Specialty	Area of Expertise / Research
	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.
Shrikant Panwalkar, PhD Associate Professor	Shrikant S Panwalkar, PhD, joined the Johns Hopkins Carey Business School in January 2011 after a long career in academics/consulting. He is an Associate Professor in the practice track with expertise in the areas of operations research and scheduling. His teaching interests include Operations Management, Project Management, Decision Models, Statistics, Quality Management, and Business Analytics.
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).

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

Name/Rank/Specialty	Area of Expertise / Research
David B. Mitchell, J.D. Adjunct Professor	Mr. Mitchell is a law enforcement professional, he graduated <i>Summa Cum Laude</i> with a Bachelor's Degree in Technology and Management from the University of Maryland, University College. In 1986 he earned his Master's Degree in Public Policy from the University Of Maryland School Of Public Policy. In 1996 Dave earned his <i>Juris Doctor</i> degree from the University Of Maryland School Of Law. He is admitted to the Maryland and District of Columbia Bar Associations. Dave is also a graduate of the FBI National Academy and the FBI National Executive Institute. After retiring from the state police, David was appointed as the Secretary of the Department of Safety and Homeland Security in Delaware, until 2009. Following his return to Maryland, he was



Name/Rank/Specialty	Area of Expertise / Research
	<p>appointed as Director of Public Safety and Chief of the University of Maryland Police Department in May 2010. Dave is an Adjunct Professor at The Johns Hopkins University, and the University of Maryland, University College. His teaching interests include Crisis Management.</p>
Name/Rank/Specialty	Area of Expertise / Research
<p>Neil Kleinberg, M.S. Adjunct Professor</p>	<p>With 25 years of experience as an entrepreneur, executive, management consultant, and lead technology engineer, Mr. Kleinberg's expertise spans the commercial and government sectors, including the information technology, financial services, national security, healthcare, judicial, public safety, and telecommunications industries. He is a founder and CEO of DiliVer, financial technology M&amp;A company. Before DiliVer, Mr. Kleinberg led corporate development buy-side and sell-side M&amp;A activities at enterprise software market leader ASI. Prior to ASI, he served as President of VerticalFalls Software, and as a founder/owner in two other prosperous high-growth technology companies—EIC, a management consulting firm, and NTC, a specialized high radio frequency electronics firm. Mr. Kleinberg is also currently an adjunct professor at Johns Hopkins Carey Business School, where he teaches Strategic Management, Entrepreneurial Finance, and Corporate Governance courses, and he is a Technology Commercialization Advisory Board member at Johns Hopkins University, where he received his MS in Computer Science and BS in Bioengineering.</p>

**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 MSERM 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.

Chester Chambers, Academic Program Director, is a senior lecturer with expertise in operations management and operations strategy.

The online courses taught in the MSERM 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 MSERM program already exist as part of the school's face-to-face part-time MSERM 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 MSERM program will allow students to achieve learning objectives that include:

- Be prepared for employment as a financial manager, business analyst, data analyst, financial analyst, logistics manager, and other roles in public, private, and government organizations domestically and internationally.
- Demonstrate knowledge and skills in risk assessment, decision making during crises, and planning and execution of resiliency strategies.

- Be able to utilize managerial competency in both security and resiliency of the enterprise.
- Contribute to development and expansion of the growing field of Enterprise Risk Management.

**(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 MSERM 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 Enterprise Risk Management 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 Enterprise Risk Management 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 overtime.



**Appendix D  
Finance Information**

TABLE 1: RESOURCES:					
Resource Categories	2018	2019	2020	2021	2022
1. Reallocated Funds	-	-	-	-	-
2. Tuition/Fee Revenue (c + g below)	\$434,368	\$1,087,421	\$1,559,490	\$1,856,879	\$2,053,829
a. Number of F/T Students	5	10	10	10	10
b. Annual Tuition/Fee Rate	\$53,931	\$55,549	\$57,215	\$58,932	\$60,700
c. Total F/T Revenue (a x b)	\$269,654	\$555,487	\$572,152	\$589,316	\$606,996
d. Number of P/T Students	14	50	85	97	108
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)	\$164,714	\$531,934	\$987,338	\$1,267,562	\$1,446,833
3. Grants, Contracts & Other External Sources	-	-	-	-	-
4. Other Sources	-	-	-	-	-
<b>TOTAL (Add 1 – 4)</b>	<b>\$434,368</b>	<b>\$1,087,421</b>	<b>\$1,559,490</b>	<b>\$1,856,879</b>	<b>\$2,053,829</b>

**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

<b>TABLE 2: EXPENDITURES:</b>					
<b>Expenditure Categories</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>2022</b>
1. Faculty (b + c below)	\$89,780	\$290,324	\$491,851	\$632,230	\$716,237
a. # Sections offered	1.9	9.2	17.6	22.2	24.7
b. Total Salary	\$67,000	\$216,660	\$367,053	\$471,813	\$534,505
c. Total Benefits	\$22,780	\$73,664	\$124,798	\$160,416	\$181,732
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	\$19,733	\$71,824	\$124,109	\$150,807	\$167,564
6. New or Renovated Space	\$0	\$0	\$0	\$0	\$0
7. Other Expenses	\$288,650	\$299,950	\$318,700	\$351,000	\$385,800
<b>TOTAL (Add 1 – 7)</b>	<b>\$471,926</b>	<b>\$774,800</b>	<b>\$1,084,334</b>	<b>\$1,322,121</b>	<b>\$1,497,575</b>

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

**Table 4. Estimated Growth in Positions Related to ERM 2014-2024**

Occupation	Employment			
	2014	2024	Change	% Change
Financial Managers	11,462	13,624	2,162	18.86%
Financial Analysts	6,360	8,234	1,874	29.47%
Management Analysts	18,517	22,068	3,551	19.18%
Market Research Analysts and Marketing Specialists	9,764	13,787	4,023	41.20%
Operations Research Analysts	3,193	4,370	1,177	36.86%
Emergency Management Directors	166	191	25	15.06%