BOARD OF HIGHER EDUCATION

REQUEST FOR COMMITTEE AND BOARD ACTION

COMMITTEE:	Academic Affairs	**NO**.: AAC-13-25
		COMMITTEE DATE: April 23, 2013
		BOARD DATE: April 30, 2013

APPLICATION OF BAY PATH COLLEGE TO OFFER THE MASTER OF SCIENCE IN CYBERSECURITY MANANGEMENT

MOVED: The Board of Higher Education hereby approves the Articles of Amendment of **Bay Path College** to offer **the Master of Science in Cybersecurity Management.**

Authority: Massachusetts General Laws Chapter 69, Section 30 et seq.

Contact: Dr. Shelley Tinkham, Assistant Commissioner for Academic, P-16 and Veterans Policy

INTENT

Bay Path College, a non-profit, NEASC-accredited institution located in Longmeadow, Massachusetts, requests approval to offer the online Master of Science in Cybersecurity Management. The institution was founded as a co-ed business college and became a women's college in 1944. The Bay Path College's proposed Master of Science in Cybersecurity Management seeks to educate and develop highly competent cybersecurity professionals who can shape and advance the nation's domestic cybersecurity management and policy needs. By providing a multi-disciplinary and broad based curriculum, the program seeks to help students develop the management and strategic skill sets that are necessary to protect businesses, institutions, the nation and its citizenry from cyber threats.

The cybersecurity field is a crucial and fast growing employment area. The literature and current job openings indicate significant personnel shortages in the cybersecurity area. The National Institute for Cybersecurity Education (NICE) writes in a recent report (September, 2011) that the pipeline of potential new talent is inadequate. According to its survey, only 40% of hiring managers are satisfied with the quality of applicants applying or federal cybersecurity jobs, and only 30% are satisfied with the number of qualified candidates who are applying.

The proposed program will prepare students for both initial placement and mid-level positions in career track jobs in the emerging cybersecurity, information assurance and risk management fields. Students will be educated in all aspects of the management of cybersecurity systems and personnel and will be prepared to assume immediate responsibility for the management and oversight of such systems.

A particular focus of the College's mission is to serve women who are generally underserved in higher education, namely first generation students and those from lower income backgrounds. Women are currently significantly underrepresented in the cybersecurity work force, and as 85% of current Bay Path College graduate students are women, the College believes that it can make significant contribution to this emerging field.

The proposed program was approved by the College's Board of Trustees on October 22, 2012.

INSTITUTIONAL OVERVIEW

The College was founded in Springfield, Massachusetts in 1897 as Bay Path Institute, a coeducational business school. In 1944, the institute was purchased by Thomas G. Carr who renamed it Bay Path Secretarial School and restricted its enrollment to women. During this time, the College moved to its present location in Longmeadow, Massachusetts. The school was chartered by the Commonwealth as Bay Path Junior College in 1949 and was authorized to grant the Associate in Science degree. Authorization to grant the Associate in Arts degree was awarded in 1963. In November of 1988, the Board of Regents approved the two-year institution's request to change the name to Bay Path College: A Two-year College for Women. In 1991, the College was granted authorization to award its first baccalaureate degrees: Bachelor of Arts in Psychology, Bachelor of Science in Legal Studies, and Bachelor of Science in Business. The institution was also approved to offer the Honorary Doctor of Humane Letters in 1991. The College was granted authorization to award the degree Bachelor of Arts in Liberal Studies in 1995, the Bachelor of Science in Criminal Justice and the Bachelor of Science in Occupational Therapy in 1997, and the Bachelor of Science in Information Technology in 1998.

The institution was approved to offer its first master degree in 2000: the Master of Science in Communications and Information Management. The Master of Occupational Therapy and

Master of Science in Advanced Practice Occupational Therapy were approved in 2002.   The Master of Business Administration in Entrepreneurial Thinking and Innovative Practices was approved in 2004 and the Master of Science in Physician Assistant Studies in 2012.   The College enrolls women in its undergraduate program and both women and men in its graduate programs.

The institution now requests approval for the Master of Science in Cybersecurity Management.

ACADEMIC AND RELATED MATTERS

Curriculum (Appendix A)

The Bay Path College Program in Cybersecurity Management will distinguish itself by focusing on the managerial and human capital aspects of the industry. Most of the cybersecurity management programs offered at other institutions have a technical emphasis. By establishing a direct focus on the managerial and operational aspects of cybersecurity, the Bay Path College program has the opportunity to establish a unique niche in this growing industry.

The proposed 36 credit Master of Science in Cybersecurity Management Program degree at Bay Path College will be delivered entirely online via the College's learning management system: Canvas. This program will be delivered through a course and credit format of twelve 3-credit courses delivered in 8-week modules. Students will have the option of taking one course every eight weeks and completing the program in 24 months or taking two courses every eight weeks and completing the program in 12 months. As a culminating exercise the students develop a cyber-threat assessment that is then mapped to a solution and supported with a cost benefit analysis. Specifically, this course provides an understanding of IT infrastructure and services, their vulnerabilities as well as the size and complexity of security threats faced by enterprises.

Admission Requirements

Students will be admitted by the program director in cooperation with graduate admissions according to current practice with the other graduate programs at Bay Path College.
In order to be admitted, prospective students must (as a minimum standard) meet the criteria set forth below:

- Completion of an undergraduate degree from an accredited post-secondary institution of learning – any discipline can apply;
- 3.00 GPA;
- Admission essay;
- Two letters of recommendation;
- Working knowledge of IT infrastructure and services.
    - At a minimum, applicants who do not have cybersecurity experience must have had recent experience working on (a) the design, development and implementation of key components of an IT infrastructure, (b) oversight of an IT team, e.g., as a financial or administrative officer, (c) hands on utilization of an ERP system, supply chain system, and/or other sophisticated IT application, or (d) other hands on experience with sophisticated IT applications in law enforcement, the military, or government agency

Tuition and Fees

The full cost of the program is $26,640 in FY 2013-2014.

Projected Enrollment

The managerial and security focus of the Master of Science in Cybersecurity Management program will make it an ideal choice for Bay Path College students who graduate with a major in criminal justice, legal studies, forensic studies, forensic psychology and/or forensic science. Management students and especially accounting majors will also be potential candidates for the program.

RESOURCES AND BUDGET

Administration and Faculty (Appendix C)

This proposed degree will be housed within the School of Management and Social Justice, overseen by a full-time program director who will have faculty status and who will report to the Dean of the School of Management and Social Justice. The director of the Master of Science in Cybersecurity Management Program will be hired from a national search process. The director of the Master of Science in Cybersecurity Management Program will hold faculty rank and will teach in the Cybersecurity program. Overall administration of the Master of Science in Cybersecurity Management including admissions, adjunct faculty recruiting, operations and assessment is the responsibility of the director.

Bay Path College selected the subject area of the proposed program partly because of its relationship to, or overlap with, fields in which it already offers instruction, including existing masters degree programs in Communications and Information Management and in Forensics. It has identified seven of its existing faculty members who are likely to be used as instructors in the proposed program and would be qualified to teach specific courses in the program's curriculum. Six of these faculty either have a JD, PhD or Ed.D. within a field related to cybersecurity management. The college anticipates that growth of the new program might lead to the hiring of an additional full-time faculty member to help fulfill teaching needs.

Library Resources

Hatch Library, along with its electronic counterpart - the Hatch Virtual Library - serves as the central learning resource center for students at Bay Path College. The library's print and multimedia collections include more than 145,000 items in all media formats, including over 85,000 electronic books. Today, students can access the catalog, read eBooks, use licensed research databases with full-text materials, and find library- recommended Internet resources from any computer with Web access on or off campus. The WMS online catalog also provides on-campus and remote access to the collection of over 8,000 electronic books. In addition to the online catalog listing of print materials for course reserves, the library offers access to electronic course reserves through Canvas, the college's course management software system. Remote authentication through EZproxy offers all Bay Path College students and faculty 24/7 off-campus access to 95 subscription research databases, most of which include full-text materials. A journal access and management service, offered by EBSCO, helps students use the library's electronic and print journal holdings more effectively.

Hatch Library is a member of the Cooperating Libraries of Greater Springfield (CLGS), which grants Bay Path College students borrowing privileges at seven other college libraries in the area. While no other CLGS member institution offers a graduate program related to Cybersecurity Management, and relatively nearby UConn's degree in Homeland Security Leadership is only partially comparable, interlibrary loan service expands the range of relevant resources available to Bay Path College students.

Physical and Information Technology Resources

The proposed program will be delivered entirely online. The institution utilizes Canvas LMS, a platform that fully integrates Web 2.0 communication technologies along with multimedia and assessment tools into a streamlined interface. Users (both faculty and students) interact with the environment and with one another by integrating the power of streaming video and/or audio throughout the system. This integration facilitates the ability of users to post video-comments in places such as the discussion board, course mail, assignments and the grade book – all without the need for special software or file uploads. Additionally, the integration and availability of rubrics to support assignment, course, and program-level assessment will help standardize and streamline assessment practices campus-wide.

The Canvas LMS is that it is an entirely cloud-based, hosted platform with no pre-set storage quotas. The Canvas system runs on the Amazon.com S3 network backbone and the contracted SLA guarantees 99.9% system uptime. Bay Path College officially completed the transition all courses and users to the Canvas platform in August 2012. Support for using the Canvas LMS is provided through the Center for Distributed Learning – a group dedicated to providing end-user training and orientation for both faculty and students through nationally recognized training programs that combine coursework, mentoring and proactive ongoing support.

Financial Resources (Appendix B)

A multi-year budget projection has been developed for the proposed program.

EVALUATION

External Review

The proposed program was evaluated by an external visiting committee composed of Jason Levy, PhD, Professor and Chair. Homeland Security and Emergency Preparedness, Virginia Commonwealth University; Paul R. Pillar, PhD. Visiting Professor and Director of Studies, Security Studies Program at Georgetown University; and Mark A. Schlesinger, PhD, retired Interim Chief Executive Officer, UMass Online.

The Visiting Committee reviewed the petition and appendices in preparation for the site visit, which took place February 28-March 1, 2013. During the visit, the Committee met with administrators, faculty, staff, and students; toured the campus and the institutions' online learning platform. The criteria that guided the review were the standards currently utilized by the New England Association of Schools and Colleges, supplemented by the criteria of the Independent Institutions of Higher Education Standards, 610 C.M.R. 2.08 (3) (b) through (g).

Overall, the visiting committee expressed strong support for the proposed program and made only two recommendations for improvement.

- Articulate the level of technological expertise required for the proposed program. While it is expected that the program will attract people with previous work experience in the information technology field and hence have sufficient technological competencies and knowledge, there would likely be a small number of students that would be interested to apply for the proposed program without the technological skills.

- Submit a written plan for the hiring of new faculty to support the proposed program. The plan should address the college's strategies for conducting a search for the program director as well as for identifying and recruiting qualified adjunct instructors.

The institution clarified its admission requirements for the proposed program. Each applicant will be expected to have sufficient technologic competencies and knowledge of information technology. These expectations were added to the proposed programs admission requirement (included under admission standards in this document) and will be articulated on the program website and made clear in all written materials. In addition, admissions will screen applicants accordingly and refer all applicants to the Director of the M.S., Cybersecurity Department for final acceptance if there are any questions about qualifications.

Furthermore, the institution developed a written plan and timeline to support the hiring of the founding program director and adjunct faculty for the program. Chronicle of Higher Education ads for the Director of the MS in Cybersecurity Management have already run, along with electronic postings in the online Higheredjobs.com website. The institution has already begun to receive CVs from qualified applicants.

After reviewing the institutions response, the visiting committee has determined that the institution has met the minimal standards for Board approval.

PUBLIC HEARING

The required public hearing will be held in the Board of Higher Education office on April 22, 2013.

STAFF ANALYSIS AND RECOMMENDATION

After a thorough evaluation of all documentation submitted, staff is satisfied that Bay Path College's proposal to offer the **Master of Science in Cybersecurity Management** meets the requirements for NEASC-accredited institutions outlined in 610 CMR 2.08. Recommendation is for approval. However, the institution will be required to follow up with Department staff after hiring a program director for the proposed program. It is the Department's expectation that the program will not be advertised, nor will students be enrolled in the proposed program until the hire is made.

Appendix A: Curriculum

Graduate Program Curriculum Outline

Major Required (Core) Courses (Total # of courses requird = 12)		
Course Number	Course Title	Credit Hours
CBY 610	Foundations of Cybersecurity	3
CBY 615	Foundations of Data Protection	3
CBY 620	Compliance and Legal Issues	3
CYB 625	Financing, Cost Control and Project Management of Cybersecurity Organizations	3
CBY 630	Emerging Cyber Threats	3
CBY 635	Human & Organizational Aspects of Cybersecurity	3
CBY 640	Information Assurance Management & Analytics	3
CBY 645	Digital Forensics	3
CBY 650	Strategic Cybersecurity Crisis Management	3
CBY 655	Cyber Criminal and Civil Investigations	3
CBY 660	Cyber Policy	3
CBY 670 (or)	Capstone I: Cyber Project	3
CBY 675	Capstone II: Cyber Plan	3
	Subtotal # Credits Required	36
Curriculum Summary		
Total number of courses required for the degree		12
Total credit hours required for degree		36
Prerequisite, Concentration, Dissertation or Other Requirements		None

Appendix B: Budget

					FY2013	FY2014	FY2015	FY2016
MS in Cybersecurity Management								
NEW ACADEMIC PROGRAM BUDGET								
					FY2013	FY2014	FY2015	FY2016
Assumptions								
	New Full-time Students					5	7	10
	New Part-time Students					25	31	35
	Per credit rate					$740	$777	$815
	Credit Hours					420	1026	1404
Revenues								
	Tuition					$310,800	$789,432	$1,128,756
	Less Financial Aid					$20,000	$20,000	$30,000
Net Revenues						$290,800	$769,432	$1,098,756
Expenses								
	Compensation and benefits							
	Salary (12 month director)				$22,000	$90,000	$92,700	$95,481
	Part-time Student Asst.					$2,400	$2,400	$2,400
	Adjunct Faculty Wages					$36,000	$75,000	$99,000
	Summer Stipend					$0	$0	$0
	Benefits				$5,500	$26,340	$30,915	$34,010
		Sub-total comp & benefits			$27,500	$154,740	$201,015	$230,891
	Other Expenses							
	BPC Overhead Charge					$29,080	$76,943	$109,876
	Office Supplies							
	Other Supplies							
	Bookstore				$500	$500	$500	$500
	Postage				$500	$500	$500	$500
	Printing and duplicating				$1,000	$1,000	$1,000	$1,000
	Purchased Services				$4,500			
		Library				$20,000	$7,500	$5,000
		Marketing			$35,000	$75,000	$75,000	$75,000
	Lease							
	Memberships					$2,000	$2,000	$2,000
	Events					$2,500	$2,500	$2,500
	Food Service					$500	$515	$515
	Meetings (off campus)					$1,500	$1,500	$1,500
	Travel					$2,000	$2,000	$2,000
	Total Expenses				$69,000	$289,320	$370,973	$431,282
	Surplus (Deficit)				($69,000)	$1,480	$398,459	$667,474
	Capital Expenses (software)					$5,000	$5,000	$5,000
	Net Cash Flow					($3,520)	$393,459	$662,474

Appendix C: Faculty

Faculty Form

Name of Faculty Member (Name, Degree and Field, Title)	Check if Tenured	Courses Taught (projected)	Number of sections (estimated)	Division of College of Employment	Full- or Part-time in Program	Full- or Part-time in other department or program (Please specify)	Sites where individual will teach program courses
Dineen, Elizabeth G. J.D., Criminal Justice Chair, Criminal Justice Department Assistant Professor		CBY 645 – Digital Forensics CBY 655 – Cyber Criminal and Civil Investigations	1	School of Management and Social Justice	Part-time	Full-time in Criminal Justice Department	Online
Dion, Justin J.D., Legal Studies Assistant Professor		CBY 620 – Compliance and Legal Issues	1	School of Management and Social Justice	Part-Time	Full-time in Legal Studies	Online
Loper, Thomas Ed.D., Management Chair of Business Department Associate Professor of Management		CBY 635 – Human & Organizational Aspects of Cybersecurity	1	School of Management and Social Justice	Part-Time	Full-time in Business	Online
Rivet, Elizabeth Ph.D. Associate Professor of Information Technology		CBY 610 – Foundations of Cybersecurity CBY 660 – Cyber Policy	1	School of Management and Social Justice	Part-Time	Full-time in Communications and Information Management	Online
Sattar, Mohammed Master of Science Management Director, MBA Program Assistant Professor of Business		CBY 625 – Financing, Cost Control and Project Management of Cybersecurity Organizations	1	School of Management and Social Justice	Part-Time	Full-time in Business	Online
Wilson, James Ph.D., Business Assistant Professor of Business		CBY – 625 - Financing, Cost Control and Project Management of Cybersecurity Organizations CBY 670 & 675 – Capstone	1	School of Management and Social Justice	Part-Time	Full-time in Business	Online
Woodruff, John J.D. Legal Studies Chair, Legal Studies Department Professor of Law		CBY 620 – Compliance and Legal Issues	1	School of Management and Social Justice	Part-Time	Full-time in Legal Studies	Online