

BOARD OF HIGHER EDUCATION

REQUEST FOR COMMITTEE AND BOARD ACTION

COMMITTEE Academic Affairs

NO.: AAC 21-06

COMMITTEE DATE: March 16, 2021

BOARD DATE March 23, 2021

APPLICATION OF BAY STATE COLLEGE TO AWARD THE MASTER OF SCIENCE IN BUSINESS ANALYTICS

MOVED: The Board of Higher Education hereby approves the Articles of Amendment of **Bay State College** to award the **Master of Science in Business Analytics**.

VOTED: Motion adopted by AAC 3/16/2021; adopted by BHE 3/23/2021.

Authority: M.G.L. c. 69, § 30 et seq.; 610 CMR 2.0 et seq.; AAC 14-35

Contact: Cynthia Farr Brown, Ph.D., Associate Commissioner for Regulatory and Veterans Affairs

BOARD OF HIGHER EDUCATION

Bay State College Master of Science in Business Analytics

INSTITUTIONAL OVERVIEW

Bay State College, a New England Commission on Higher Education (NECHE) accredited, private, for-profit institution located in Boston, MA, requests authorization to offer the Master of Science in Business Analytics (MSBA).

Bay State College was founded as a travel academy in 1946. Over the years it has evolved into a more comprehensive institution, with an emphasis on written and oral communication skills. Currently, Bay State offers Associate and Bachelor degree programs in business and commerce, allied health, nursing, and other disciplines.

Ambow BSC, Inc. acquired the College in 2017. Due to the fact that more than 50% of the membership of Bay State's Board of Trustees has changed since the acquisition, the Department has determined that Bay State has not been operated for the previous six (6) years by the same governing entity, and is therefore not able to use the Expedited External Review process to seek approval for the proposed program. Bay State followed the full program review process for the current application.

INTENT AND MISSION

Bay State reports that its proposed MSBA program is consistent with its mission: that it "prepares students for successful careers and global citizenship through academic rigor and individualized support." The College further reports that the proposed program, which would be its first at the graduate level, will continue the institution's emphasis on providing career-focused education in a close-knit, individualized setting.

Bay State College's commitment to developing Master's level degree programs began during the creation of its prior Strategic Plan, Vision 2020, in 2014. As the College formulated that plan, and after its adoption, Bay State reported that it was prepared to develop graduate degree programs. It should be noted that subsequent to the site visit conducted as part of this program approval process, on December 17, 2019, Bay State's Board of Trustees adopted a new strategic plan which contains several strategies that explicitly reference the development of graduate programs.

The purpose of the proposed MSBA Program is twofold: (1) to prepare students for a career in business analytics and subfields and to provide them with data analytics skills that improve job prospects; and (2) to upskill employees in business, marketing or merchandising who want to advance in their organizations.

Bay State maintains that the proposed MSBA will address employer needs for professionals in the field of business analytics and that it includes new concepts and skillsets occasioned by the digital transformation occurring across industries. The program is designed primarily for individuals in the areas of merchandising and marketing who must access and analyze an increasing volume of information to provide insights and present a business case for their findings. The proposed MSBA program will also fulfill the needs of information technology professionals who provide support functions in analytics.

The proposed program was designed through a comprehensive process that included campus level design and deliberation, approvals through the existing governance structures, external review, and approval by the institution's Board of Trustees on March 20, 2019. Department staff organized a full review of the proposed program including the initial application, the appointment of a visiting committee that conducted a site visit and prepared a report, institutional response to that report, and amendments to the initial application reflecting changes recommended by the visiting committee. The required public hearing was subsequently advertised and held.

NEED AND DEMAND

National and State Labor Market Demand

To research the proposed program relative to market, in 2018 Bay State College acquired two software licenses from Burning Glass Technologies: Labor Insight and Program Insight. The college used these programs to examine job/degree data to research potential academic programs with a strong focus on employment potential, salary data, preferred skills, and degree completions at competing institutions. Bay State's Office of Institutional Research (OIR) conducted a thorough program needs assessment that addressed both labor market trends and program supply in the Greater Boston area.

The OIR analysis found growing demand for data analytics degrees at the master's level, and that demand is strong in the Northeast region. Massachusetts ranks sixth in terms of job postings for both data-driven decision makers and functional analysts. These jobs currently command salaries of \$69,100 to \$98,100 (average annual salary). Massachusetts also ranks fifth for analytics managers. Analytics managers require a master's degree or higher at 11%

of total postings, which is expected to grow; these jobs command average salaries of \$93,600 to \$113,700.¹

The College reviewed five areas in Business and Information Technology of which Merchandising and Customer Analytics and Marketing Analytics, were determined to be the best fits for the College as concentrations under the general degree of a Master of Science in Business Analytics.

The College assembled a task force to design and present the new degree program. The Chair of the Business Department, the Chair of the Fashion Merchandising program, and other faculty assumed primary responsibilities for course development. The design team also consulted adjunct faculty, the Librarian, the Registrar, the Vice President of Admissions, and the Vice President of Academic Affairs, in aligning the proposed degree program with the College's procedures and priorities.

Bay State shared the initial MSBA program design with industry experts who provided feedback that was incorporated into the final program design. Bay State staff also benchmarked it against similar programs at other New England institutions. Bay State reported confidence that there is still demand for more programs offering the development of the skills and knowledge embedded in the proposed MSBA degree.

Student Demand

Following a suggestion from the Visiting Committee, Bay State conducted a survey of current students and recent alumni regarding their potential interest in the proposed program. Of the current students who responded, 43 percent indicated they would consider enrolling in a graduate degree program at Bay State. Respondents expressed that they wanted to have more information about the program. Bay State will use these results to further inform the design of a marketing, outreach and information strategy as it begins the program rollout.

OVERVIEW OF THE PROPOSED PROGRAM

Admission

Applicants must:

- Complete the program application form.
- Hold a bachelor's degree from a regionally accredited college or university

¹ Markow, Will et al. *The Quant Crunch: How the Demand for Data Science Skills is Disrupting the Job Market*. Boston: Burning Glass Technologies, 2017, pp. 5-8.

- Submit undergraduate transcript(s)
- Provide a current resume
- Submit a letter of recommendation
- Complete a personal "Statement of Purpose"

Students without prior academic work in statistics must take and pass the Bay State course "MAT 500: Managerial Statistics" prior to enrolling in the first program course.

International students must, in addition to the above requirements, submit a TOEFL score of 550 or better.

Students may transfer up to four courses from another graduate program. For three-credit courses of comparable content, Bay State College will award the full four credits for the Bay State course equivalent. Graduate courses will require a minimum grade of "B" to be considered for transfer.

PROGRAM ENROLLMENT

	# of Students Year 1	# of Students Year 2	# of Students Year 3	# of Students Year 4
New Full Time	45	60	60	60
Continuing Full Time		40	73	83
Totals	55	100	137	143

Enrollment projections are based on three cohort starts each year.

Full-time = one course per eight-week term, two terms per semester, three semesters per year.

Curriculum (Attachment A)

The proposed program is housed in the Department of Business and Information Technology. It consists of a total of 40 credits. There is one, four-credit foundational course in business intelligence, a 20-credit core of courses focused on concepts and application of analytic tools, and a 16-credit concentration area in one of three tracks: (1) Marketing Analytics; or (2) Merchandising and Customer Analytics); or (3) a General Option designed to give students a choice of 4, 4-credit courses across the two concentrations.

The program begins with a foundational course in business intelligence, "CIS 510: Information Management for Business Intelligence." All students must take this course before they advance to their analytic core courses and concentration.

The MSBA's analytics core includes four required courses: "MAT 510: Intermediate Statistics for Business;" "CIS 512: Data Management and Modeling;" "CIS 518: Data Analytics with Python"; and "CIS 514: Predictive Analytic,"s and a choice of either "CIS 516: Online Analytical Processing for Business Intelligence," or "CIS 520: Data Visualization."

The analytics core emphasizes learning objectives that address new skill development and application to business problems and opportunities.

The MSBA program's concentration courses explore concept mastery in the context of the digital transformation occurring in the marketing and merchandising fields and subfields. Students will choose a concentration in either Marketing Analytics, Customer Analytics or a General option, with guided elective choices (four courses, 16 credits total). The program's concentration courses emphasize the synthesis of skills and problems/solutions: e.g., application of sentiment analysis to glean insights to customer behavior; utilization of data visualization tools to examine and act upon patterns in data (integrate, synthesize, evaluate).

The proposed MSBA program will be offered in an evening format of one, 4-credit course per eight-week term. Bay State has offered programs in this format for many years. Students who enroll in this format typically take one or two courses online, depending on their schedules. For academic year 2020 – 2021 Bay State engaged in a comprehensive faculty development process to offer all courses in a hybrid instructional format. Should pandemic conditions continue into academic year 2021-2022, the college will be prepared to offer this MSBA program in a hybrid or wholly online format.

RESOURCES AND BUDGET

Budget (Attachment B)

Tuition for the proposed program is \$600 per credit, with ten, four-credit courses required for the degree. There is an annual per student fee of \$300. The total cost of the degree is \$24,600.

Faculty and Administration (Attachment C)

Bay State College has hired both a new department chair, who began his work in May 2020, and a full-time faculty member who began his work in January 2020. An additional full-time faculty member will be added in year two of the program's implementation. Further faculty

hiring will be tied to program growth. Courses in the program will be taught by both current full- and part-time faculty members, as well as by additional contingent faculty who will be hired to teach specialized courses.

In addition to program faculty, Bay State reports it will create and hire for a new position of Graduate Programs Coordinator in order to provide graduate student support needed for their success. This individual will connect to the areas of enrollment, student activities, scheduling, and facilitating access to relevant College services. This new position will also assist Bay State in establishing a culture reflective of a master's degree granting institution.

Facilities, Library and Technology

The institution's library houses more than 9,000 books, 80 print periodical subscriptions, and several database subscriptions including to Pro Quest Central, JSTOR, LexisNexis Academic, and Gale's database suite. Bay State is a member of the Massachusetts Library System (MLS) and of LYRASIS, a library cooperative that provides consulting services and continuing education for staff, as well as opportunities to participate in consortium purchasing of library resources. Bay State students have the benefit of the more than six million books at the Boston Public Library. Bay State reports that they will acquire additional monographs and professional and research-based journals specific to the fields of the proposed MSBA, as well as provide unique orientation to and support for graduate students' information literacy skills.

PROGRAM EFFECTIVENESS

The proposed program's learning outcomes state that graduates will be able to:

- 1) Apply data analysis techniques to the solution of real-world business problems;
- 2) Summarize core concepts, frames of reference, and business drivers associated with digital marketing/merchandising;
- 3) Analyze the conditions under which data analytics informs and evolves marketing/merchandising strategies;
- 4) Effectively communicate findings or analytical results through data visualization techniques; and
- 5) Evaluate methods of using data to inform and consider alternative decisions and scenarios, and to mitigate risk.

Bay State College realizes that the addition of a graduate program requires changes to its institutional culture. Some of these changes include updating expectations of the qualifications and experience of faculty members teaching in the proposed program; securing appropriate academic resources (i.e., library, course materials) for the new graduate student population; and newly designed course assessments that assess a deeper level of

understanding. Graduate students will also require specific onboarding processes, as well as their own retention and engagement strategies.

Bay State reports that the college treats academic assessment as a means to continuous improvement. Through departmental meetings and advisory board consultations, the program reviews whether the existing learning outcomes effectively prepare students for the desired career path. The department chair and faculty members, in collaboration with the Director of Institutional Research, then designs methods of assessment. These may include embedded exam questions on core course examinations, capstone course projects, and departmentally juried written and research assignments. The results of these assessments are then analyzed to evaluate whether students are meeting predetermined benchmarks. The faculty and department chair review, discuss, and utilize the results from these evaluations to adjust program curricula. In addition, departments and the college use information related to graduation, retention, job placement, and loan repayment rates to understand what students have gained as a result of their education.

Each academic program also undergoes an Academic Program Review. The Curriculum Committee oversees the review process, which operates on a five-year rotating schedule, to determine a program's effectiveness in meeting its educational mission. The Academic Program Review includes regular examination of department goals, learning objectives, assessment data and input from students, faculty, graduates, program advisory boards, alumni, and an outside academic evaluator. Departmental meetings between Department Chairs and faculty also include regular and consistent review of course and program effectiveness.

Bay State College has organized a new Graduate Programs Curriculum Committee to engage in a broad variety of matters related to program development, implementation, and review. The College also intends to establish a permanent graduate advisory board to provide input annually on the proposed MSBA program.

EXTERNAL REVIEW AND INSTITUTIONAL RESPONSE

The proposed program was reviewed by a Visiting Committee composed of Kristine Barnett, Ed.D., Vice Provost for Academic Affairs, Dean of Liberal Studies, Bay Path University (Chair); Martin Green, Ph.D., Associate Professor, MBA Program, Franklin Pierce University; and Chali Nondo, Ph.D., Professor of Economics, Business Administration and Economics Department, Massachusetts College of Liberal Arts. Department staff supported the committee and provided contact with Bay State to facilitate the review process. The Committee considered the application and related materials and conducted a site visit at Bay State on Oct. 29 and 30, 2019.

Overall, the Committee found that the program fit within the mission of Bay State College, met the review standards, and would prepare its graduating students well. The Committee made several recommendations to improve the proposed program. The most important involved generating program need data based on current student and alumni surveys; ensuring sufficient qualified faculty and administrative human resources were made available for continuing to plan and then roll out the proposed program; providing evidence that parent company Ambow BSC, Inc. supported the program and would provide sufficient resources for its startup; clarifying certain aspects of the curriculum such as stipulating a required versus recommended course; developing a detailed map of student learning outcomes and assessment of learning for the entire program; and developing policies and a student handbook specific to the proposed graduate-level program.

The institution responded substantively to all recommendations. The proposal submitted for staff review reflected adjustments to program design consistent with the Visiting Committee's recommendations, including an updated curriculum outline and a contingency budget. The College also provided a letter of commitment from parent company Ambow BSC, Inc. in support of the financial resources needed to launch the program. Bay State also provided a memorandum from the College's auditor that clarifies the intercompany accounting practices that reflect the equity contribution Ambow Education Holdings, Ltd. continues to make via Ambow BSC, Inc.

PUBLIC HEARING

The required public hearing was held on March 5, 2020 at the Department of Higher Education, located at One Ashburton Place in Boston, Massachusetts. There were no public comments heard or received.

STAFF ANALYSIS AND RECOMMENDATION

After a thorough evaluation of all documentation submitted, staff is satisfied that the proposal of Bay State College to award the **Master of Science in Business Analytics** degree meets the Board of Higher Education requirements for NECHE-accredited institutions outlined in 610 CMR 2.08 in the Degree-Granting Regulations for Independent Institutions of Higher Education, and staff recommends that the Board approve the application by Bay State College to award this degree.

Attachment A: Curriculum Outline

Master of Science in Business Analytics		
Course number	Course Title	Credit Hours
	Foundation Course	
CIS 510	Information Management for Business Intelligence	4
	Analytics Core Courses	
CIS 550	Intermediate Statistics for Business	4
CIS 560	Data Analysis with Python	4
CIS 630	Data Visualization	4
CIS 600	Predictive Analytics	4
CIS 620	Online Analytical Processing OR	
CIS 625	Data Management and Modeling	4
Students will choose ONE concentration below, OR will take any four of the courses below (General Option)		
	Marketing Analytics Concentration (choose 4)	
MKT 610	Digital Marketing Strategy	4
MKT 612	Social Media Marketing Analytics	4
MKT 616	Market Research and Analysis	4
MKT 630	Strategic Marketing	4
CXM 612	Customer Relationship Management	4
CXM 620	Social Media Strategy	4
	Customer Analytics Concentration (choose 4)	
CXM 612	Customer Relationship Management	4
CXM 614	Consumer Behavior	4
CXM 616	Customer Analytics	4
CXM 618	Consumer Experience	4
CXM 620	Social Media Strategy	4
MKT 600	Data Analysis for Marketing	4
Curriculum Summary		
Total number of courses required for the degree		10
Total credit hours required for degree		40

ATTACHMENT B: FISCAL

	Annual Expenses			
Cost Categories	Year 1	Year 2	Year 3	Year 4
Full Time Faculty (Salary & Fringe)	\$141,600	\$236,000	\$236,000	\$236,000
Part Time/Adjunct Faculty (Salary & Fringe)	\$60,000	\$160,000	\$204,000	\$204,000
Staff	\$60,000	\$60,000	\$60,000	\$60,000
General Administrative Costs	\$9,800	\$29,400	\$29,400	\$29,400
Instructional Materials, Library Acquisition	\$28,000	\$28,000	\$28,000	\$28,000
Facilities/Space/Equipment	\$45,000	\$45,000	\$45,000	\$45,000
Marketing	\$60,000	\$60,000	\$60,000	\$60,000
TOTALS	\$404,400	\$618,000	\$662,400	\$662,400

	Annual Income			
Revenue Sources	Year 1	Year 2	Year 3	Year 4
Tuition	\$432,000	\$1,152,000	\$1,506,000	\$1,483,000
Fee	\$13,500	\$18,000	\$18,000	\$18,000

Tuition is \$600/credit and the fee is \$300/annually per student

ATTACHMENT C: FACULTY

Summary of Faculty Who Will Teach in Proposed Program							
Name	Tenured	Courses Taught (C) to indicate core course.	Number of sections	Division of College of Employment	Full- or Part-time in Program	Full- or part-time in other department or program	Sites where individual will teach program courses
Morrisette, Scott Ph.D., MBA, BSc Information Systems Business Entrepreneur	No	<ul style="list-style-type: none"> • CIS 510 Information Management for Business Intelligence (C) • MKT 612 Social Media Marketing Analytics 	1 1	Day	Full-Time	Yes Business / Information Technology	Main Campus Boston
Bincsyk, Jeff Ph.D. Candidate Marketing, MBA, BA Global Marketing Executive	No	<ul style="list-style-type: none"> • MKT 616 Marketing Research and Analysis • MKT 630 Strategic Marketing 	1 1	Evening	Part-time	No	Main Campus Boston
Alhwiti, Theyab Ph.D., MS Industrial and	No	<ul style="list-style-type: none"> • CIS 620 Online Analytical Processing for 	1	Day	Full-time	Yes Information Technology	Main Campus Boston

Systems Engineering B.S. Mechanical Engineering		Business Intelligence (C)					
Gagneja, Priyanka MSc Applied Economics MBA, BSc Computer Science Senior Analytics Consultant	No	<ul style="list-style-type: none"> • CIS 630 Data Visualization (C) • CIS 600 Predictive Analytics (C) 	1 1	Evening	Part-time	No	Main Campus Boston
Inge, Christina MEd Adult Ed and Instructional Technology BA English Marketing Executive and Consultant	No	<ul style="list-style-type: none"> • MKT 610 Digital Marketing Strategy 	1	Evening	Part-time	No	Main Campus Boston
Krishnamoorthy, Suban Ph.D., MSc Computer Science, M.Tech, BE Computer Telecomm Engineering	No	<ul style="list-style-type: none"> • CIS 625 Data Management and Modeling (C) 	1	Evening	Part-time	No	Main Campus Boston
Soro, Omar Ph.D. Economics	No	<ul style="list-style-type: none"> • CIS 560 	1	Evening	Part-time	No	Main Campus Boston

MS Computer Science		Data Analysis With Python (C)					
Economist and Data Scientist							
York, Andrea M.B.A. Marketing, Department Chair, Associate Professor Fashion Merchandising	No	<ul style="list-style-type: none"> • CXM 614 Consumer Behavior • CXM 620 Social Media Strategy 	1 1	Evening	Part-time	Yes Fashion Merchandising	Main Campus Boston