BOARD OF HIGHER EDUCATION

REQUEST FOR COMMITTEE AND BOARD ACTION

COMMITTEE: Assessment and Accountability **NO**.: AAC 07-04

COMMITTEE DATE: October 11, 2006

BOARD DATE: October 19, 2006

MOVED: The Board of Higher Education hereby approves the expedited application of the **University of Massachusetts Boston** to award the **Master of Science in Information Technology.**

One year after graduating the program's first class, the University shall submit to the Board a status report addressing its success in reaching program goals as stated in the application and in the areas of enrollment, curriculum, faculty, resources, and program effectiveness.

Authority: Massachusetts General Laws Chapter 15A, Section 9(b)

Contact: Aundrea Kelley, Associate Vice Chancellor for Academic Policy

BOARD OF HIGHER EDUCATION

September 2006

University of Massachusetts Boston

<u>Master of Science in Information Technology</u>

INTENT

The University of Massachusetts Boston (UMB) has submitted an expedited proposal to offer a Master of Science in Information Technology (MSIT). The proposed program intends to prepare graduates who can operate in knowledge-intensive and technology-driven environments in healthcare, high-tech, non-profit and government organizations. Today the requirements for information technology (IT) professionals are shifting away from development work—the type of work that can be sent offshore—to integrative, strategic and change-enabling projects that can only be performed with a clear understanding of the business context. The latest trend in information technology education is to integrate knowledge of IT and the functional areas of business, with emphasis on strategic IT applications and the development of project management, team, innovation, and human communication competencies. The proposed program is designed to address this change by building upon students' business experience to prepare graduates for roles such as business systems analysts, database analysts, information technology management/corporate liaisons, information technology product analysts, and project managers.

The proposal has obtained all necessary governance approvals on campus and was approved by the University Board of Trustees on August 23, 2006. The letter of intent was circulated on July 17, 2006. Dr. James Carabetta, Chair of the Department of Computer and Information Sciences at Westfield State College, offered his support of the proposed program and noted it would likely be of interest to Westfield State graduates from the Boston area.

MISSION

The proposed Master of Science in Information Technology is consistent with the mission of the University to provide affordable, quality education and enhance job opportunities. The proposed MSIT degree program also aligns with the guiding principles of the strategic plan of the College of Management to better manage its growth by serving a new group of students with a program resting mainly on existing instructors and courses.

NEED and DEMAND

The University has identified undergraduate and graduate education in information technology as a key factor in the future competitiveness of the US economy. While the demand for skilled technical professionals in certain traditional IT job categories, such as programming, continues to drop, the overall size of the national IT workforce is now approaching an historic high of 10.4 million. The U.S. Department of Labor's Bureau of Labor Statistics (BLS) reports that employment in the information supersector is expected to increase by 11.6 percent, adding 364,000 jobs by 2014. The Department of Labor estimates that eight out of the 20 highest-percentage changes in employment are anticipated in information technology occupations.

The outlook in Massachusetts is particularly favorable for students who would pursue the proposed UMB MSIT degree. The Massachusetts Division of Unemployment Assistance (DUA) projects that the seven fastest-growing occupations over the next decade will all be in the Information Technology field. These career categories, which include such occupations as Computer Support Specialists, Computer Software Engineers, Network Systems Analysts, and Database Administrators, should experience from 51-73 percent growth by 2010. Overall, the DUA estimates that these employment areas will generate over 50,000 openings over the next decade.

The UMass Boston College of Management Graduate Program Office maintains a database of potential graduate student inquiries. This database feeds from multiple sources, including Enrollment Marketing and Information Services, Graduate Admission Information Sessions, and direct inquiries. Out of the average 2000 records captured every year, approximately 25 percent are IT-related inquiries.

A May 2003 survey published by ITAA (Information Technology Association of America) noted that "nine out of ten IT workers are found in banks, insurance companies, manufacturing plants or other non-IT businesses." As the need for IT-savvy managers in such organizations has grown dramatically over the past decade and is projected to continue expanding for many years to come, these businesses comprise the principal target market for the proposed MSIT program. The University concluded that existing UMass Boston programs do not deliver the specific depth of instruction in the management and integrative requirements of IT assets, nor do they meet the emerging and developing requirements of IT professionals in Boston.

A number of private higher education institutions are offering either an MSIT or an MBA with an IT option. A sample of such programs includes:
   Boston University: Master of Science in Computer Information Systems
   Boston College: Master of Science in Information Systems
   Bentley College: Master of Science in Information Technology
   Worcester Polytechnic Institute: Master of Science in Information Technology
   Tufts University (Continuing Education): Master of Science in Information Technology

Each of these programs focuses primarily on the technological aspects of IT management and is designed for managers within IT fields or functional areas. The proposed UMass Boston MSIT program, however, would contextualize the management of technology assets within broader strategic concerns, thus enabling managers in all business functional areas to employ IT as an integral part of overall organizational management.

At the state level, there are no MSIT programs in the University of Massachusetts system. Unlike the only comparable offerings at other Massachusetts state universities, MBA or Computer Science programs, the program is not a general program in either business or computer science; the proposed MSIT program thus does not duplicate any programs in public higher education in Massachusetts. The proposed MSIT intends to fill this gap and complement the Master of Business Administration and Master of Science in Accounting programs at UMB.

PROGRAM EFFECTIVENESS

The proposed MSIT program derives its goals from the mission statement of the College of Management. The specific program goals include:

1. Provide high-quality and relevant education in the techniques, methods and strategies for the effective execution and management of IT initiatives in organizations.
2. Educate students to understand and apply the fundamental principles and technical requirements of the IT profession in their practice.
3. Prepare students for IT work practice in diverse organizations and client systems of all sizes.
4. Educate students about the socio-technical contexts of IT practice, the changing nature of those contexts, the dynamics of change, and the project manager's role in facilitating transformation through technology.
5. Contribute to address the needs of the region's IT education requirements at the graduate level.
6. Engage in scholarly activity, including the discovery, integration, application, dissemination, and evaluation of information-intensive and technology-based research.
7. Deliver service that maintains the currency of the Master of Science in Information Technology program and promotes collaboration with local organizations.

The MSIT Industry Advisory Board will be consulted and involved in the program, providing suggestions for program enhancement and feedback about industry requirements.

Direct measures of the achievement of the goals of the proposed MSIT program will include the number of students gaining employment or advancing in the field. Program assessment methodologies will include regular curricular review, used in conjunction with surveys of exiting students and alumni to determine that the required coursework is meeting the needs of future IT professionals. The accomplishment of student learning goals will be measured through independent assessments of the students' performance in case analysis, practical projects, research projects and examinations in the graduate IT courses. Managerial and strategic skills will be assessed through case studies and group projects that foster teamwork, communication and collaboration.

Student employment placement will serve as a key indicator of the success of the program, and such feedback will allow the College of Management to adapt the program, advising, and recruiting/admissions work to the changing needs of Massachusetts employers. Through annual curricular reviews of the entire graduate program as part of the College's AACSB accreditation and yearly surveys of MSIT graduates and local employers, the College will continually reassess the structure and goals of the MSIT program.

Measurable initial goals include:
85% placement in the IT field (measured through alumni survey, September 2008)
80% student satisfaction ratings (measured through student evaluations)
20 matriculating students by fall 2007; 25 by fall 2008
35% increase in faculty publication by 2008

ADMISSIONS AND ENROLLMENT

Standards for admission to the proposed MSIT program will be highly competitive and will mirror those for the MBA and MSA programs. Every candidate must have a four-year bachelor's degree or a graduate degree from an accredited institution to be considered for admission, and each must submit all undergraduate and graduate transcripts, GMAT and TOEFL scores, résumé, three letters of recommendation and two essays. Undergraduate performance, work experience and standardized test scores will be the primary factors in determining admission, but other elements will be taken into serious consideration as well. The recommendation letters will specifically seek referees' input on the applicant's communication skills, ability to conduct independent work, and potential for becoming successful agents of change.

The proposed program is anticipated to begin with a class size of approximately 15 to 20 in the first year of its implementation with a total enrollment growing to about 40 students by the time the program is fully implemented. It is anticipated that there will be an even number of full- and part-time students.

CURRICULUM (Attachment A)

The proposed MSIT is a 30-credit degree program. All students must complete ten courses: six required core classes, three electives, and the capstone course. All courses are designed primarily as on-ground courses but will draw heavily upon asynchronous discussion threads and other virtual pedagogical tools to enhance learning. Students without a B.S. in Management or a related field may need to complete up to five prerequisite courses in business that total up to an additional 15 credits.

The proposed MSIT courses will be organized in three clusters: Technical Foundation of Information Technology (offers the technical foundation for understanding the architecture of modern IT and the dynamics of information technology projects), Applications of Information Technology (focuses on the role that information technology plays in organizations), and Information Technology Management and Strategy (provides an understanding of the operational and strategic frameworks under which information technology initiatives exist).

RESOURCES and BUDGET (Attachment B)

The Department of Management Science and Information Systems (MSIS) in the College of Management will provide the faculty and teaching resources to run the MSIT program. To bring this new program to fruition, the University anticipates requiring one new tenure-track faculty line and one lecturer line; two FTE Graduate Assistantships annually, later adjusted to program size; and additional advertising resources of approximately $10,000 annually for the MSIT program's first two to three years. On March 8, 2006, the University committed to hire one full-time, tenure-track faculty member and one full-time lecturer to support the program upon its implementation in the Academic year 2007-2008. In addition, the Dean of the College of Management has committed an allocation of $10,000 for advertising purposes during the first two years of the program.

EXTERNAL REVIEW

The UMB proposal was reviewed by Dr. Thomas W. Dillon, Associate Professor of Computer Information Systems, College of Business, James Madison University; and Dr. Bijoy Bodoloi, Professor of Computer Management and Information Systems, Southern Illinois University Edwardsville. The team reviewed the proposal and conducted an on-campus visit that included interviews with institutional and program leaders and a tour of the facilities. The review team fully supported the proposed program. They found that the need for the program had been thoroughly researched and the program goals and curriculum thoughtfully designed. The team was also satisfied with the quality of the faculty, facilities, equipment, and library resources. The only suggestions from the review team were the addition of a second computer technology course and consideration of an additional faculty position in the near future. UMB responded that it had already begun to implement an ongoing assessment process designed to monitor the efficacy of the curriculum and would consider additional faculty as enrollments increase.

STAFF ANALYSIS AND RECOMMENDATION

Board staff thoroughly reviewed all documentation submitted by the Boston campus, the external reviewers, and the President's Office of the University. Staff recommendation is for approval of the Master of Science in Information Technology at the University of Massachusetts Boston.

Upon graduating the first class for this program, the University shall submit to the Board a status report addressing its success in reaching program goals as stated in the application and in the areas of enrollment, curriculum, faculty resources, and program effectiveness.

Attachment A

Curriculum Outline

MSIT Degree Program

Core Courses (Required, 18 credits)

Number	Name
MSIS 610	Innovation in IT Management
MSIS 616	Information Technology for Quality and Competitive Management
MSIS 614	Business Data Communications & Computer Networks
MSIS 618	Database Management
MSIS 611	Knowledge Management and Business Intelligence
MSIS 619	Business Process Innovation & Systems Analysis and Design

Electives (Select 3 courses, 9 credits)

Number	Name
MSIS 615	Object Oriented Information Systems
MSIS 613	Information Security, Privacy and Regulatory Compliance
MSIS 612	Information Technology Controls and Auditing
MSIS 621	Information Technology Strategy and Operations
MSIS 620	Customer Relationship Management
MSIS 622	e-Business and e-Commerce
MSIS 617	Management of the Supply Chains

Capstone (Required, 3 credits)

Number	Name
MSIS 630	Project and Change Management

TOTAL CREDITS: 30
TOTAL COURSES: 10

Pre-requisite Courses (15 credits)

Number	Name
MSIS 640	Computers and Information Processing Systems
MBA AF 601	Managerial Economics
MBAMS 630	Statistical Analysis for Managers
MBAMS 635	Operations Management
MBAMGT 650	Organizational Analysis and Skills

Attachment B - Budget

	FY2007 Amount:	FY2007 New $ Requested:	FY2008 Amount:	FY2008 New $ Requested:	FY2009 Amount:	FY2009 New $ Requested:	FY2010 Amount:	FY2010 New $ Requested:	FY2011 Amount:	FY2011 New $ Requested:
Faculty										
Additional F/T faculty Required:										
Tenure Track Line			$105,000							
Lecturer Line			$60,000			$165,000 *** approved & funded**				
Library Resources:										
No new library resources are required		$-		$-		$-		$-		$-
Facilities:										
No new classrooms will be necessary										
Marketing $	$10,000	$-		$5,000		$ 5,000*		$-		$-
Advertising & printing material (to be funded from College's existing internal resources)										
TOTAL:	$10,000	$-	$165,000	$170,000	$-	$-	$-	$-	$-	$-

*as necessary

CURRICULUM & FACULTY DEPLOYMENT PROJECTION

	AY06/07	AY07/08	AY08/09	AY09/10	AY 10/11
New Enrollment	10	30	40	40	40
Total FT MSIS Faculty	15	17	17	17	17
Add'l Faculty	0	2	0	0	0
Total Grad MSIS sections	16	19	20	20	20
Add'l Sections	3	3	1	0	0
UG MSIS Sections	76	76	76	76	76