

**BOARD OF HIGHER EDUCATION**  
**REQUEST FOR COMMITTEE AND BOARD ACTION**

**COMMITTEE:** Assessment and Accountability

**NO.:** AAC 07-20

**COMMITTEE DATE:** April 12, 2007

**BOARD DATE:** April 19, 2007

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**MOVED:** The Board of Higher Education hereby approves the Articles of Amendment of **Massachusetts Maritime Academy**, to award the **Master of Science in Emergency Management**.

Upon graduating the first class for this program, Massachusetts Maritime Academy 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**

April 2007

### **Massachusetts Maritime Academy**

Master of Science in Emergency Management

#### **INTENT AND MISSION**

In March 2007, Massachusetts Maritime Academy (MMA) submitted an expedited proposal to offer a Master of Science in Emergency Management (MSEM). The proposed program is intended to prepare students for an increased leadership role in emergency management in the public, private and not-for-profit sectors through the application of strategic thinking to managerial problems, scenario development and implementation, and disaster preparedness, response, recovery and mitigation. MMA developed the MSEM over a two-year period during which the Academy has been a regular participant in the FEMA's annual Emergency Management Higher Education Conference, served as an associate member of the Homeland Security and Defense Education Consortium, and partnered with the Naval Postgraduate School's Center for Homeland Defense and Security. While, the program is not intended to prepare students for licensure, MMA anticipates that the majority of graduates, upon graduation, will be qualified for designation as a Certified Emergency Manager (CEM), the designation administered by the International Association of Emergency Managers.

The proposed program closely aligns with the MMA mission to graduate "men and women to serve the maritime industry as licensed officers or to serve the transportation, engineering, environmental, and industrial interests of the Commonwealth and the nation" and was named as a strategic goal in MMA's FY 2007-2011 Five-Year Strategic Plan. The proposed MSEM also follows MMA's recent addition of a Bachelor of Science in Emergency Management to its undergraduate program and will complement the Academy's existing Master of Science program in Facilities Management. MMA anticipates that the Emergency Management program will appeal to a much larger population in the public sector, while the Facilities Management graduate students, to date, have been primarily from the private sector.

The required Letter of Intent was circulated January 10, 2007. No comments in response were received. The Massachusetts Maritime Academy board of trustees approved the proposed Master of Arts in Emergency Management on September 10, 2004.

#### **NEED AND DEMAND**

*Need for Graduates.* The intent of the proposed program is to support the growing need for a professional cadre of emergency management professionals. Emergency Management Specialists coordinate disaster response or crisis management activities, provide disaster preparedness training, and prepare emergency plans and procedures for natural (e.g., hurricanes, floods, earthquakes), wartime, or technological (e.g., nuclear power plant emergencies, hazardous materials spills) disasters or hostage situations. MMA has a long tradition of educating those who operate, maintain and manage hospitals, power generation stations, high rise buildings, manufacturing facilities and college campus complexes. In addition, each of these facilities also requires a person who is designated as a disaster preparedness specialist. This individual needs to have a sound grasp of aspects of the facility that vary from security to fire protection to environmental impact to evacuation, as well as know what local agencies are required to be included in any decision making process.

Emergency Management Specialists work closely with the Federal Emergency Management Agency (FEMA) and its Massachusetts counterpart, MEMA (Massachusetts Emergency Management Agency). There are currently 190 positions at the state level designated with an Emergency Management title. According to the *Bureau of Labor and Statistics Occupational Outlook Handbook, 2006-07 Edition*, the projected employment for emergency management specialists is expected to grow by 28.2% from 10,948 in 2002 to 14,040 by 2012. During the same ten-year time period, all other service-providing industries are expected to grow at 19.2%, while the total growth of all industries, service and goods-producing combined, is expected to grow at 14.8%.

*Student Demand.* The Center for Marketing Research at the University of Massachusetts Dartmouth (UMASS) and the MMA collaborated, in developing and conducting a comprehensive marketing survey that yielded 244 respondents; 50% of the survey respondents indicated an interest in a Master of Science in Emergency Management.

*Program Duplication.* Currently, there are 39 emergency management masters-level programs - primarily graduate certificates - nationally. Sixty percent of these programs are focused on specific aspects of emergency management, e.g., public health, and not on a well-rounded graduate education in this field. The Academy's recently approved B.S. in Emergency Management is the only emergency management higher education degree at either the undergraduate or graduate level offered by a Massachusetts public higher education institution. Other Massachusetts institutions that offer a masters program in Emergency Management are Tufts University (Masters in Humanitarian Assistance), Boston University (online Master of Science in Business Continuity and Emergency Management), and Anna Maria College (Master of Science in Emergency Management).

As the maritime sector continues to be one of the greatest concerns to terrorism experts, the MMA is uniquely positioned in the region to offer programs in emergency management that educate future leaders about transportation security and the unique domain of ships, ports, and the complex and multiple disciplines involved in managing them.

## **ADMISSION AND ENROLLMENT**

*Admission Requirements.* To be considered for admission to the program, candidates must possess a B.S. degree in an emergency management-related field and demonstrate the capability for successful graduate-level study. Candidates must submit an MMA application, official college transcripts from an accredited degree-granting college or university, two letters of recommendation, and Graduate Management Admissions Test scores or GRE scores. Admissions will be based on overall evaluation of applicant's application together with an interview of the final candidates.

*Projected Enrollment.* Estimated student enrollment in the first year of the program would be approximately 24 students for the first cohort with the possibility of two cohorts per year in the future. MMA intends to recruit students from all levels of government in emergency medical services, public health, and law enforcement, as well as from private sector businesses that need expertise in business contingency and continuity planning, hospitals and health-care facilities, and volunteer organizations with significant disaster responsibilities, such as the Red Cross.

MMA will focus recruitment on alumni who are professionally involved in the disaster management and prevention fields and seek to leverage existing partnerships with the Massachusetts National Guard, Massachusetts Fire Academy, the Massachusetts State Police,

and the Massachusetts Hospital Association. Recruitment efforts will also reach out to industry organizations, such as the Northeast States Emergency Consortium, the National Voluntary Organizations Active in Disasters (regional offices), and the National Emergency Management Association.

#### **PROGRAM ENROLLMENT PROJECTION**

	# of Students Year 1	# of Students Year 2	# of Students Year 3	# of Students Year 4*
New Full Time	24	24	24	24
Continuing Full Time	0	23	23	23
New Part Time	0	0	0	0
Continuing Part Time	0	0	0	0
<b>Totals</b>	<b>24</b>	<b>47</b>	<b>47</b>	<b>47</b>

The number of continuing full-time is based upon the MMA experience with three cohorts to date in the Master of Science in Facilities Management program.

#### **CURRICULUM (Attachment A)**

The 34-credit proposed Master of Science in Emergency Management curriculum comprises a nine-course core component, including a four-credit capstone exercise and a two-course elective sequence that focuses on such specific topics as terrorism, business continuity, and public health issues. The proposed curriculum utilizes a multi-disciplinary approach to providing students with problem-solving capabilities needed to prepare for, respond to, recover from, and mitigate disasters and emergencies. MMA will offer the MSEM for a cohort in the executive format with courses presented one at a time over an 18-month period. Each course will run for a six-week period with classes being held every other weekend on Fridays from 6-10 p.m. and Saturdays from 8 a.m.-5 p.m.

#### **RESOURCES AND BUDGET (Attachment B)**

*Faculty and Administration.* The teaching resources for the program will be drawn primarily from full-time Academy faculty and adjunct professors. An estimated eleven faculty will be necessary to implement the program, including two additional faculty who will be hired following program implementation. Administrative support for the program will be provided by the Division of Graduate and Continuing Education. MMA permanent faculty will be assigned as MSEM program student advisors.

*Facilities.* Much of the classroom experience will be off-campus at a location that is intended to be centrally located to a majority of the projected student population. Several courses, however, including Technology in Emergency Management and Emergency Operations, will be primarily held at MMA to allow students to apply evolving disaster management technologies in practical situations via the use of the MMA's 555,000 ton training ship, the Enterprise, emergency management simulator and specialized computer software.

*Library.* The Academy library is currently increasing its holdings in emergency management publications and materials to accommodate its emergency management program at both the undergraduate and graduate levels.

*Fiscal.* The model for the program is the Academy's successful existing graduate program offered off campus in the executive format. Under that model, the \$28,949 package tuition price covers all fees, overnight accommodations, meals, notebook computer, and all texts and materials. Based upon the model of the existing graduate program, the preliminary estimated revenues for a cohort of 24 students is: \$627, 000. The total preliminary estimated cost for administering the program in the first full year of implementation is estimated to be \$555,000. The four-year projected expenses for the MSEM program are based on the following:

- 24 students enrolled per year
  - Program is taught in an executive cohort style off site with an enrollment cap
- Base year tuition \$5,543 and fees \$23,406
  - The tuition is the same as the MSFM program, and the fees reflect program costs.
- Teaching positions filled by current full-time faculty on overload basis. Faculty will be paid in accordance with the Massachusetts State College Association contract—that is, graduate education commensurate with rank on a per semester hour basis.
  - Since this program will be run on alternate weekends, full-time faculty from MMA will overload to teach along with selected faculty from nearby institutions.
- 4% increase in tuition and fees per year
  - Standard allowed for special purpose state colleges.
- 4% increase per year for all salaries, administrative costs, instructional supplies, marketing costs, and library acquisitions
- 4% increase per year for all field and clinical resources
  - These costs are related to the capstone experience and field exercise planning, execution, and review.
- 5% per year facilities/space/equipment
  - This is to cover expenses of our off-site facility for food, lodging, classroom space, audio visual equipment as well as expenses at the MMA for weekends when specialized laboratory simulation is needed.
- 5% increase per year rental of virtual simulator
  - To add realism to project exercises at our off-site facility, a virtual simulator will be utilized.

One time start-up costs include the purchase of a Smartboard, two LCD projectors, and 2 laptop computers. The program will be self-supporting and return approximately \$100,000 per year to the MMA when fully subscribed.

## **PROGRAM EFFECTIVENESS**

A central means to ensure continued quality, relevance and effectiveness of the program will be the use of annual surveys administered to graduates and employers. These surveys will address whether the program has prepared the graduate for work demands, the graduates' job satisfaction and professional development, salary, and promotion, among other related indicators.

Because this is a rapidly evolving field, industry-wide professional certifications are not well established. The Academy is reviewing the Certified Emergency Manager (CEM) Certification as a possible third-party assessment for graduate students. The CEM certification is sanctioned through the International Association of Emergency Managers (IAEM) and is supported by the Federal Emergency Management Agency (FEMA) and the National Emergency Management Association (NEMA). Due to the small cohort size, MMA expects to maintain a close relationship with the alumni of the program and will survey them to measure the cohort's career advancement. MMA will administer an exit satisfaction survey at the closure of the first cohort, with an expected satisfaction of 85 percent. Within six months of completing the program, employers will be surveyed with a goal of a 90 percent satisfaction rate. The Academy is also creating a professional advisory board (comprising 18-22 experts in the emergency management field) for the Emergency Management programs. This board will provide feedback regarding the fit of the curriculum to emergency management industry trends and influence changes that may be needed to better meet industry training and education needs.

## **EXTERNAL REVIEW AND INSTITUTIONAL RESPONSE**

The proposed program was reviewed by Susan M. Smith, Ed.D., MSPH, Associate Professor of Safety and Public Health and Director of UT Safety Center, The University of Tennessee, Knoxville Tennessee; and Jennifer Wilson, Ph.D., Assistant Professor and Co-Director, Emergency Management Program, North Dakota State University, Fargo, North Dakota.

Overall, the reviewers stated that the proposed Master of Science in Emergency Management program "is a well-rounded approach to emergency management education. All four traditional phases of emergency management (preparedness, response, recovery and mitigation) are covered to various degrees within the course offerings as well as the more recent area of interest, homeland security."..... The concentration in the subject matter beyond a baccalaureate degree that the proposed program's graduates would receive will help them acquire the knowledge, skills and abilities needed in the job market."

The reviewers recommended minor curricular revisions, including that the proposed program should focus on marine/maritime-related issues in order to gain a competitive advantage to other programs nationally. The reviewers recommended that once the proposed program is approved, the Academy seek at least one experienced professional/expert in emergency management at the doctoral level to become part of the program faculty.

In its institutional response, MMA revised the curriculum to reflected reviewer input, including the combination of two courses, renaming of two additional courses, and modification of homeland security and transportation security courses to focus on the maritime sector. In accordance with the recommendation of the review team, MMA will seek additional faculty - doctorally qualified in the field - following program approval.

**STAFF ANALYSIS AND RECOMMENDATION**

Board staff thoroughly reviewed all documentation submitted by Massachusetts Maritime Academy and external reviewers. Staff recommendation is for approval of the Master of Science in Emergency Management.

Upon graduating the first class for this program, Massachusetts Maritime Academy 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.

## Graduate Program Curriculum Outline

*Major Required (Core) Courses (Total number of courses required =11)*

<b>Course Number</b>	<b>Course Title</b>	<b>Credit Hours</b>
EM-5000	Organizational Behavior in Emergency Management	3
EM-5020	Legal Issues in Emergency Management	3
EM-5040	Managing Information Technology Resources	3
EM-5060	Hazards Risk Management	3
EM-5080	Strategic Planning and Budgeting in Emergency Management	3
EM-5100	Risk and Crisis Communication	3
EM-5120	Emergency Operations	3
EM-5140	Public Health Issues in Emergency Management	3
EM-5160	Emergency Management and Disaster Recovery	3
EM-5180	Transportation Security Management	3
EM-5200	Capstone Seminar in Planning, Exercise Design, Evaluation, and Implementation	4
Subtotal Number Core Credits Required		34
Elective Course Choices (Total courses required = 0)		
Subtotal Number Elective Credits Required		0
<b>Curriculum Summary</b>		
Total number of courses required for the degree		11
Total credit hours required for degree		34
<b>Prerequisite, Concentration or Other Requirements:</b>		
<p>To be considered for admission to the program, candidates must possess a B.S. degree in an Emergency Management-related field and must be capable of successful graduate-level study. Candidates must submit an MMA application, official college transcripts (from an accredited degree-granting college or university), two letters of recommendation, and their results on the Graduate Management Admissions Test or Graduate Record Examination. Admissions will be based on overall evaluation of applicant's application together with an interview of the final candidates.</p>		



**ATTACHMENT B**

**NEW ACADEMIC PROGRAM BUDGET**

<b>One-Time/Start-Up Costs</b>		<b>Annual Expenses</b>			
		Year 1	Year 2	Year 3	Year 4
	<i>Cost Categories</i>				
	Full-Time Faculty (Salary and Fringe)	n/a	n/a	n/a	n/a
	Part-Time/Adjunct Faculty (Salary and Fringe)	50,000	52,000	54,080	56,243
	Staff	107,000	111,280	115,731	120,360
	General Administrative Costs	6,000	6,240	6,490	6,750
	Instructional Materials, Library Acquisitions	106,300	110,552	114,974	119,573
17,000	Facilities/Space/Equipment	206,700	217,035	227,887	239,281
	Field and Clinical Resources	68,180	70,907	73,743	76,693
	Marketing	38,000	39,520	41,100	42,744
	Other (Specify)	12,000	12,600	13,230	13,892
17,000	<b>TOTALS</b>	<b>594,180</b>	<b>620,134</b>	<b>647,235</b>	<b>675,536</b>

<b>One-Time/Start-Up Support</b>		<b>Annual Income</b>			
		Year 1	Year 2	Year 3	Year 4
	<i>Revenue Sources</i>				
	Grants	-	-	-	-
	Tuition	133,032	138,353	143,887	149,643
	Fees	561,744	584,214	607,583	631,886
	Departmental	-	-	-	-
	Reallocated Funds	-	-	-	-
	Other (specify)	-	-	-	-
	<b>TOTALS</b>	<b>694,776</b>	<b>722,567</b>	<b>751,470</b>	<b>781,259</b>