

## **Request for Authorization to Establish a Master of Science in Construction and Facilities Management at UNC Charlotte**

UNC Charlotte requests authorization to establish an M.S. in Construction and Facilities Management degree program (CIP 15.9999).

### **Program Description**

Construction Management is a program that prepares individuals to manage, coordinate, and supervise the construction process from concept development through project completion on timely and economic bases. Facility Management (efficient and effective operation of the finished structure) is a profession that encompasses multiple disciplines to ensure functionality of the built environment by integrating people, place, process, and technology. The proposed 30 semester hour M.S. in Construction and Facilities Management (MSCFM) degree program is designed to provide the advanced professional development and graduate education necessary for construction and facility management professionals to work in the increasingly high tech, rapidly changing construction industry and to effectively interface with related disciplines such as energy efficiency, environmental protection, code and standards enforcement, and insurance. The emerging economic climate for green construction, sustainable facility management, energy infrastructure, and related business services in the Charlotte region would seem to make UNCC a good fit for this MSCFM program. Furthermore, this program will take on a sustainable energy infrastructure focus both in the curriculum and in research projects as part of the Innovative Design, Engineering, and Sustainability (IDEAS) Center and the legislatively-supported Energy Production and Infrastructure Center (EPIC) initiatives at UNC Charlotte. The proposed program will be offered through both on-campus and online delivery.

### **UNC Tomorrow Relevance**

The proposal states: “This proposal is aligned with UNCC’s response to UNC Tomorrow; specifically, this program is one of the desired deliverables in the EPIC initiative at UNCC and is specifically listed in UNCC’s response to UNC Tomorrow.” In addition, the proposed program would address two Recommendations within the UNC Tomorrow Report, namely the components to enhance our Global Readiness (Recommendation 4.1), and Our Environment (Recommendation 4.6).

### **Highlights from UNC-GA Data Template**

The proposed new degree program is unique in that it will be the first integrated construction and facility management graduate degree program in North Carolina. (Nationwide, it will be only the fifth graduate program in facility management.) ECU and WCU currently offer online Masters programs in Construction Management. In the past three years, UNCC has established one doctorate, three masters, and four baccalaureate programs, and has discontinued one baccalaureate and six masters programs.

### **Outcome of Consultation with Disciplinary Panels**

The panel included faculty members from ASU and ECU in addition to the UNCC faculty presenters. Panel members asked thoughtful questions about the proposed program's curriculum and how it compared to that of the two existing Master in Construction Management programs within UNC. Discussion was also held on how this program is being designed to meet the economic needs of the Charlotte area. Overall comments were positive, with consensus on the desirability of offering this degree program.

### **Student Demand**

The infrastructure and building needs in the Charlotte metropolitan area, coupled with the large construction industry located there and UNCC's longstanding strong relationship with that industry, provide significant opportunities for the MSCFM program. Furthermore, student interest in graduate study within the Department of Engineering Technology is high (this will be the department's first graduate program), and the Fall 2009 undergraduate enrollment of 826 majors provides a large pool of potential M.S. students. The program projects full enrollment of the program in its fourth year will be 35 full-time and 30 part-time students.

### **Opportunities for Graduates of the Program**

The proposal states: "The Bureau of Labor Statistics' 2007-08 Edition of the Occupational Outlook Handbook indicates that employment of construction managers is projected to increase by 16 percent during the 2006-16 decade, faster than the average for all occupations, and that the number of job openings will exceed the number of qualified individuals to fill them." Data from the NC Employment Security Commission show that the need in North Carolina (and in Charlotte in particular) for qualified construction and facility managers is significantly greater than in the nation as a whole. In addition, the increasing complexity of construction projects and the finished structures will likewise increase demand for specialized and well-educated management-level personnel within the construction and facility management industry.

### **Resource Implications**

**Resource needs:** Existing instructional facilities and library holdings are adequate to support the proposed program. A total of 15 new courses will need to be developed. Ongoing financial support for the new program will be mainly enrollment growth funding. This enrollment funding will be used to add four new faculty positions for the program.

**Resources allocated:** UNCC is utilizing existing facilities, laboratory equipment, technological infrastructure, and library resources to offer and support this new program. Faculty will develop the 15 new courses in-load.

**Estimated cost to the State:** Based on the University funding formula, when the program reaches full enrollment, UNCC would receive additional state appropriations of approximately \$704,000 if fully funded by the General Assembly.

### **Recommendation**

It is recommended that the Board of Governors approve UNC Charlotte's request to establish a Master of Science in Construction and Facilities Management degree program (CIP 15.9999) subject to the availability of funding.

## General Information Template for Academic Program Review

### ***Degree Area and Level:***

Master of Science in Construction and Facilities Management at UNC Charlotte (CIP 15.9999)

### ***Addressing UNC Tomorrow:***

This proposed program would address multiple Recommendations within the UNC Tomorrow Report including the components to enhance Our Global Readiness (Recommendation 4.1), and Our Environment (Recommendation 4.6).

### ***Role of Program in Relation to State and Regional Needs:***

According to the proposal, “With the increasing urbanization and associated transportation and infrastructure challenges, the resultant exploding demand for construction professionals and the associated demand for facility managers across the nation and particularly in North Carolina and the Charlotte region become even more acute. This proposed program is positioned in support of the Department, College and University missions to provide intellectual capital and to educate North Carolina citizens to meet the challenges of the region and state.”

### ***US Labor Department Analysis:***

- *Summary* – Overall employment of engineering technicians is expected to grow 7 percent between 2006 and 2016, about as fast as the average for all occupations. Competitive pressures will force companies to improve and update manufacturing facilities and product designs, resulting in more jobs for engineering technicians.

Source: [http://www.occsupplydemand.org/OSD\\_UnitOfAnalysis.aspx?CLUSCODE=029A-02&ST=NC&PathNo=1](http://www.occsupplydemand.org/OSD_UnitOfAnalysis.aspx?CLUSCODE=029A-02&ST=NC&PathNo=1)

### ***Availability of Program Statewide (Enrollment and Degrees Awarded in Last 3 Years):***

- *Public universities*

Enrollment			Academic Year						
			Fall 06	Spr 07	Fall 07	Spr 08	Fall 08	Spr 09	Fall 09
ECU	Master in Construction Management	MCM	N/A	5	6	10	14	13	18
WCU	Master in Construction Management	MCM	17	13	30	27	36	29	38

Number of Degrees Awarded			Academic Year		
			2006-2007	2007-2008	2008-2009
ECU	Master in Construction Management	MCM	N/A	N/A	3
WCU	Master in Construction Management	MCM	N/A	4	10

- *Private universities* – Not available.

### ***Available in Online or Distance Format from UNC institutions:***

ECU and WCU offer their MCM programs through UNC Online.

### ***Available or not from Academic Common Market:***

Not Available.

### ***UNC Charlotte Campus enrollment and degrees awarded in similar programs at the Masters level:***

(Based on two CIP digits – 15 CIP is the summary group for Engineering Technology under which Construction and Facilities Management is a program)

Enrollment			Academic Year						
			Fall 06	Spr 07	Fall 06	Spr 08	Fall 08	Spr 09	Fall 09
UNCC	Engineering/ Industrial Management	MS	18	23	23	22	24	21	27

Number of Degrees Awarded			Academic Year		
			2006-2007	2007-2008	2008-2009
UNCC	Engineering/ Industrial Management	MS	8	8	9

***Campus Average of enrollment and degrees awarded in this degree area at the Masters level:***  
*(Based on two CIP digits – 15 CIP is the summary group for Engineering Technology under which Construction and Facilities Management is a program - over the last 3 Academic Years, Fall 2006-Fall 2009.)*

Campus Average			
	Number of Active Programs	Enrollment per Semester	Degrees Awarded per Year
ASU	1	32	14
ECU	2	127	42
NCA&T	1	79	31
UNCC	1	23	8
WCU	2	45	14
Campus Average:		61	22

***UNC Charlotte Campus Degree Programs added in the past three years:***

- *Bachelor*
  - BA Special Education, General Curriculum (03/20/2009)
  - BS Systems Engineering (09/07/2007)
  - BS Respiratory Therapy (05/11/2007)
  - BS Public Health (03/16/2007)
- *Master*
  - MUD Urban Design (06/13/2008)
  - MA Latin American Studies (02/09/2007)
  - MS Bioinformatics (05/11/2007)
- *Doctoral*
  - PhD Nanoscale Science (01/12/2007)

***UNC Charlotte Degree Programs discontinued in past three years:***

- *Bachelor*
  - BA Special Education (03/20/2009)
- *Master*
  - MEd Special Education, Cross-Categorical Disabilities (03/20/2009)
  - MEd Special Education, behavioral-Emotional Handicaps (03/20/2009)
  - MEd Special Education, Mental Handicaps (03/20/2009)
  - MEd Special Education, Learning Disabilities (03/20/2009)
  - MEd Special Education, Severe and Profound Handicaps (03/20/2009)
  - MA Art Administration (03/20/2009)
- *Doctoral*
  - N/A