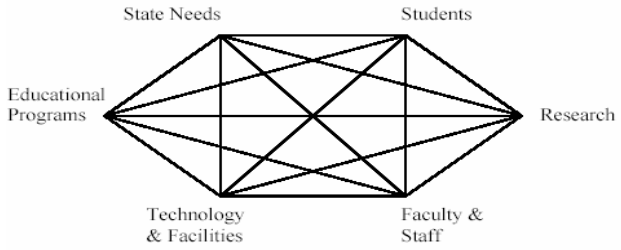

University of Alaska Board of Regents

Board of Regents Summary Form

University of Alaska Anchorage
School of Engineering
Graduate Certificate in Port and Coastal Engineering
Target admissions date: Fall 2006

Relation to the Academic Mission of the University of Alaska Anchorage

The University of Alaska Anchorage is located on the shore of Cook Inlet and is surrounded by the State's most densely populated and commercially developed coastal communities. The region includes the State's largest ports and commercial fishing harbors. The UAA School of Engineering is advantageously situated to provide specialized continuing education for Alaska's professional engineering community whose offices are concentrated in Anchorage. This professional community faces a growing call for expert assistance from communities troubled by coastal erosion and shoreline development issues related to expanding population and commercial development along the coast. The proposed Graduate Certificate will provide engineers with a professional qualification that will help them assure public safety and protection of public and private investments along Alaska's coastline. The credential will make commercial engineers qualified and competitive for work in other coastal regions of the world.

State Needs Addressed by this program

Alaska's harbors and seaports are primary centers of commerce and vital links to interior communities and to valuable natural resources. The scenic grandeur of the State's 33,000-mile shoreline draws visitors from around the globe. Coastal resources must be shepherded by sophisticated means to assure their sustainability. Specialized training is necessary to design, build, and operate coastal works in cold regions and to evaluate their effects on land and marine environments. Owners of the proposed Port and Coastal Engineering Graduate Certificate will carry formal university acknowledgement of their particular expertise. It is the intent of the UAA School of Engineering that the certificate becomes a standard qualification for those who regularly practice port and coastal engineering in Alaska.

State Needs are not met by the existing programs

Courses included in the proposed Graduate Certificate program have been taught by the UAA School of Engineering for 8 years as elective components of Master of Science degrees in Civil or Arctic Engineering. The training has led those who completed the courses to become highly competitive commercial engineers and valued agency specialists addressing coastal issues in Alaska and elsewhere. A distinct credential is not yet provided in the UA system that recognizes professional qualification in this highly specialized area of engineering practice.

Student opportunities

The Graduate Certificate in Port and Coastal Engineering is designed for students employed or seeking employment as practicing professionals in the academic, regulatory, industrial, military, or consulting sectors. Certificate requirements include courses involving direct engagement with communities and regional governments for the sake of providing real-world experience in facing complex issues and challenges of coastal development. Practical challenges are posed to students who collaborate as working groups to formulate optimum solutions. Certificate owners will be sought-after commercial engineers and valued agency specialists addressing coastal issues in Alaska and elsewhere.

Board of Regents Summary Form
Graduate Certificate in Port and Coastal Engineering

Student outcomes

Abilities to:

1. characterize oceans, seas, and estuaries in terms of physical dimensions, sediments, water chemistry, major wind patterns and currents, and wave climate,
2. plan and design port and harbor features suited to demands of vessels and cargo transfer operations and to local oceanographic and nearshore conditions,
3. define nearshore coastal processes in terms of wind, wave, and current climates and their interaction with sediments and local features of the shoreline,
4. quantify natural physical processes or human activities responsible for coastal erosion and design shore protection works suited to the local environmental setting, and
5. accomplish oceanographic and engineering data collection, including water level measurements and hydrographic surveys, analyze data, and interpret analytical results to define nearshore bathymetry, waves, tides, and coastal processes.

Enrollment Projections

Historical enrollments in the courses composing the proposed Graduate Certificate are presented below. The availability of the certificate is expected to increase these enrollments to a stable average enrollment of 10 students in each class. An average 10 certificates per year are projected to be awarded after the second year the certificate is officially available.

Year	1997	1998		1999		2000		2001		2002		2003		2004		2005		2006	
Course	F	S	F	S	F	S	F	S	F	S	F	S	F	S	F	S	F	S	F
CE A674			6					6			9								1
CE A675	10				15				11			8			14		7		8
CE A676		5				5				10			4					6	
CE A677										6		2				6		7	
GEO A433				9		7					6				10		5		3

Research opportunities

Students pursuing the Graduate Certificate may be inspired to continue their education and participate in research toward a Master of Science in Civil Engineering or in Arctic Engineering. The UAA School of Engineering has active research in coastal erosion and other nearshore processes using a growing suite of specialized instruments and equipment.

Fiscal plan for development and implementation

The proposed Graduate Certificate in Port and Coastal Engineering is composed of courses that have been offered by the UAA School of Engineering for 8 years. No additional financial resources are required to develop or implement the program. Expenses include the proportionate cost for full-time faculty and contract costs for Adjunct who will be contributing to this program. Revenues are primarily tuition for an anticipated average enrollment of 10 students per course.

Expense and Revenue Projections

	FY07	FY08	FY09	FY10
1 Full-time Engineering faculty (20%)	17,100	17,100	17,100	17,100
3 Part-time Adjunct faculty	18,800	18,800	18,800	18,800
Estimated Tuition Revenue for Program	**$36,200**	**$36,200**	**$36,200**	**$36,200**
Net Program Revenue	**$300**	**$300**	**$300**	**$300**