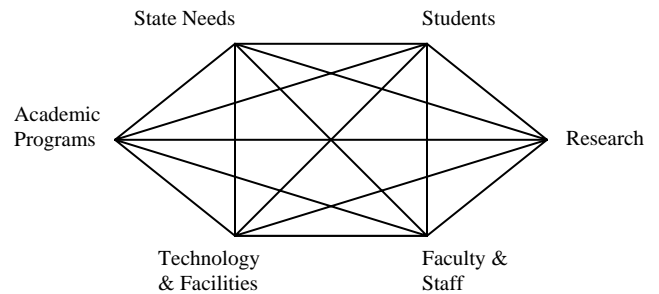


University of Alaska New Program Approval Board of Regents Summary Form

MAU: University of Alaska Anchorage

Degree Title: Bachelor of Science in Construction Management

Target Admission date: Fall 2007



Title and brief description: The Construction and Design Technology Division of the Community and Technical College (CTC) proposes to offer a **Bachelor of Science in Construction Management (BSCM)**. This program will provide students with the professional level skills needed to participate as members of the interdisciplinary team responsible for the successful management and execution of construction projects. Construction managers plan, direct and are responsible for managerial oversight of construction projects. They coordinate the many different elements of construction projects including human, material, and financial resources. A successful construction manager possesses skills that span a broad range of disciplines along with technical knowledge of construction processes and procedures. This curriculum is designed in accordance with the *Standards and Criteria for Accreditation of Postsecondary Construction Education Degree Programs*, (Document 103) published by the American Council for Construction Education (ACCE).

Relation to the Education Mission of the University of Alaska and UAA

The development of bachelor's degree curriculum is in response to a continued industry need for trained professional construction managers for Alaska. This is directly related to the University of Alaska mission to "provide opportunities to all who can benefit from educational programs of high quality". This program will have high academic standards while providing a broad foundation of technical knowledge and management skills. It has been developed in active collaboration and partnership with the community by engaging industry associations and the UAA Construction Management Advisory Committee, as well as with input from practicing construction professionals in the planning, development, and review of the proposed curriculum.

The Associate of Applied Science in Construction Management (AAS-CM) was approved and began to admit students in AY 2005. It was the first construction management degree for Alaska with the major course requirements coming from a selection of Architectural and Engineering Technology (AET) and Construction Management (CM) courses. The AAS-CM program has had near-capacity enrollments in its first four semesters of offerings. The first program graduates in May 2006 have entered a high demand career field that is experiencing rapid growth in Alaska. A number of graduates and students who are currently enrolled in AAS program are looking forward to completing a bachelor's degree when and if it becomes available. Currently, students must leave the state to acquire a bachelor's degree in construction management.

State Needs met by this program

This degree provides a clear pathway for students into professional level positions related to construction management. State needs in this area were well documented in a 2002 study entitled "*Needs Assessment – A Construction Management Bachelor of Science Degree Program in Alaska*", published in the Associated Schools of Construction, *Journal of Construction Education*.

<http://www.ascjournal.ascweb.org/> The primary author of this study is David Gunderson, PhD, CPC, of Washington State University. Dr. Gunderson also served on the faculty team that developed this curriculum.

It is a well-established fact that the Alaska construction industry is facing growing shortages of both skilled crafts workers and management personnel. Notably:

- The Alaska Department of Labor¹ predicts that the number of construction management positions in Alaska will grow 14% by 2012.
- About 15% of construction manager positions are held by non-residents.
- About 38% of construction managers are over 50 years old.

Additionally, construction activity continues growing both in Alaska and nationally.

- The Alaska construction industry is anticipating several large infrastructure and resource extraction projects that will have a long-term and broad impact on the Alaska economy and the associated construction market.
- Military and Federal construction spending is experiencing significant growth in Alaska and there is no downturn yet in sight.
- Construction activity nationally continues to grow; up 8% in 2005 and predicted to rise again by 3% for 2006².

Student Opportunities and Outcomes

Because of the interdisciplinary nature of construction management skills, this degree program takes maximum advantage of existing courses already in place at UAA. The original development plan (AY02) for construction management education at UAA was formulated as follows:

- 1) Cross-list existing construction and design related technical course content from the Architectural and Engineering Technology program for lower-division classes thereby reducing the number of new courses to be developed. This was accomplished when the AAS-CM curriculum was developed.
- 2) Once the AAS-CM degree was approved and became viable, utilize the existing coursework in the program to serve as a lower-division foundation for bachelor's degree curriculum. The new BSCM curriculum includes just 9 new upper-division courses.

Students currently enrolled in the AAS-CM program may continue their construction management education without interruption and without being required to take additional prerequisite coursework. Also, the recently approved AAS-CM program at the University of Alaska Fairbanks, Tanana Valley Campus, was written to align with this curriculum. This will enable their students who choose to continue their education at UAA to complete a baccalaureate degree.

Employment Outlook for BSCM Graduates

The present and long-term employment opportunities for construction management graduates are very good. Typical job titles for such positions include project managers, assistant project managers, project coordinators, project administrators, project field assistants, cost estimators, quantity surveyors, project schedulers and superintendents. The Gunderson study demonstrated a strong demand for construction management entry-level employees in general contractor and subcontractor businesses. Other employers include the petroleum and resource extraction industries that have some of the largest construction operations in Alaska. Also, there are a large number of public agencies and private owners who employ construction managers to provide oversight and administration of their capital projects programs. Many of these potential employers, particularly government agencies and the petroleum industry, require 4-year degrees as a minimum job qualification.

Some of the benefits of a new BSCM program to students and industry include:

- Students will not have to leave Alaska to pursue a 4-year CM degree.
- An Alaska-based program that has been designed and will be taught by faculty who have Alaska construction experience will do the best job preparing students to work in the unique construction environment of Alaska.

¹ The State of Alaska's Department of Labor and Workforce Development publication "Alaska Occupational Forecast to 2012".

² Engineering News Record. 11/21/05.

- Students in the BSCM program will complete a required internship program for which the Alaska construction industry has pledged its support.
- Alaska residents who graduate from CM programs outside of Alaska are heavily recruited by outside firms to fill positions in their companies resulting in a net talent loss for Alaska construction firms.

Projected Enrollments

Majors: Enrollments for the proposed BSCM are projected to be approximately 32 declared majors after the first academic year, growing to 128 after eight semesters. These estimates are based on current program capacity and could potentially increase with a proportionate investment in faculty, facilities and program promotion.

Student Credit Hours: Student credit hours are projected to be over 400 for the first semester of offerings, growing to about 900 – 1000 per semester after eight semesters. *These estimates include students currently in the AAS-CM program and the 50% who indicated they will change majors from AAS to BS.

Academic Year	Semester	SCH	Semester	SCH
2006-07	*F 06	400 - 432	*S 07	495 - 504
2007-08	F 07	558 - 585	S 08	639 - 684
2008-09	F 08	720 - 774	S 09	765 - 855
2009-10	F 09	882 - 936	S 10	909 - 1008

Graduates:

The number of BSCM graduates is expected to build to approximately 16 – 24 per year after four full years of offerings (2011).

Research Opportunities

There are many subject areas within the construction management field where the opportunities for research are excellent. The climatic and geographic location of Alaska requires that construction managers nearly always face difficult and sometimes extreme logistical and technological challenges. Because of these challenges, construction contractors in Alaska have developed unique processes and procedures that allow them to successfully complete projects in these difficult circumstances. Many of these management processes and procedures have been developed primarily by trial and error, are often proprietary, and have not had the benefit of objective research.

Examples of potential research topics at the undergraduate and graduate levels include:

- Remote site project management
- Managing skilled/unskilled labor in culturally diverse settings
- Cold weather/permafrost construction operations and techniques
- Construction operations in environmentally sensitive areas
- Sustainable construction techniques and materials for cold regions

Faculty and Staff Support

The CM program will be administered by the Construction and Design Technology (CDT) Division Director working with a department chair. Administrative support includes a program assistant position and two full-time administrative assistants who are shared with other programs in the Community and Technical College.

The AET and CM programs in the CDT Division have strong faculty resources including two full-time tenured faculty and three full-time term faculty. Teaching assignments are split between the AET and CM programs for lower division courses because five courses are cross-listed between the programs.

Generally, two of the five current faculty have teaching assignments with an emphasis in the CM subject area, the other two have assignments with an emphasis in the AET area and the last has a 25% teaching assignment while serving as Chair/Director. A full-time tenure-track faculty is currently being sought for Fall 08 to replace one current term faculty position. Additionally, one additional full-time term faculty will be hired for AY 08. The full-time faculty are supplemented by a qualified pool of adjunct instructors.

A 4-year course offering plan is appended to this summary.

Fiscal Plan for Development and Implementation

Curriculum Development and Program Initiation Expense:

All of the funding required for curriculum development and associated program start-up expense was contributed to the UA Foundation by the Alaska construction industry (\$111,200). The effort to raise funds for BSCM program development was planned and implemented by the UAA Construction Management Advisory Committee.

Projected Budget:

The combined budget for the AAS and BS programs in Construction Management are presented here since courses and faculty are shared by both. Faculty and staff salaries make up the bulk of expenses. Revenues sources for the program include student tuition and fees, existing base funding supporting the AET and CM programs, reallocated funds from the college and the university, promised and projected industry contributions and future allocations obtained through the UAA Planning and Budget Advisory Council process. Projected revenue and expenses for Construction Management courses offerings and degree programs for FY 08 through FY 11 are summarized below. The college, the university and industry have committed to fund the programs as shown.

	FY 08	FY 09	FY 10	FY 11
Expenses:				
Faculty Position 1 (current term)	87,632	90,035	92,504	95,041
Faculty Position 2 (current term/tenure-track)	87,588	89,990	92,458	94,994
Faculty Position 3 (term – new 08)	93,000	95,550	98,170	100,863
Faculty (Chair) Position (25%)	27,742	28,369	29,012	29,670
Administrative Assistant	47,286	48,704	50,166	51,671
Lab Assistant	4,875	5,013	5,157	5,304
Adjunct Labor Pool	17,904	18,620	19,365	20,140
Total Personnel	366,026	376,282	386,832	397,683
Travel	2,500	2,500	2,500	2,500
Contractual	8,308	8,474	8,644	8,817
Commodities	10,000	10,200	10,404	10,612
Equipment and other program start-up expenses	18,000	12,000	10,000	10,000
Total Projected Program Expense	404,834	409,455	418,380	429,612
Revenue:				
CTC budget for program operations	326,234	322,284	320,432	317,085
Tuition	49,500	63,900	76,500	90,900
Course and program fees	8,600	8,772	8,948	9,127
Industry contributions	20,500	14,500	12,500	12,500
Total Projected Program Revenue	404,834	409,456	418,380	429,612

Student Services

Program-specific services will be provided by the Department Chair and assigned faculty. These include academic and career advising and internship placements. The full range of institutional services available to CM students to include housing, health, athletics, clubs and student government. No immediate impact on the availability or quality of the institutional services provided is projected.

Students are provided opportunities to complete their CM internship requirements through the Construction Management Advisory Committee and a planned annual department Internship/Job Fair. Additional employment and internship placement support is provided for students by the UAA Career Services Center.

Several scholarships specifically for UAA CM students are offered by the local construction industry. Additionally, students are kept apprised of national and other scholarship opportunities for CM students through the department and the Academic Advising Coordinator in the Office of the Dean of the Community and Technical College.

Library and Information Resources

All UAA students have access to the full suite of library services, many of which are available on line (see: <http://www.lib.uaa.alaska.edu/>). Collections in Construction Management and related engineering disciplines have recently been supplemented with numerous new titles. The AET/CM Library, located in the CM computer labs, contains over 500 volumes of architectural, engineering and construction related texts, code books, and industry resource information. The AET/CM Library replicates Resource Rooms found in local architectural/engineering/ construction design firms.

Technology, Facilities and Equipment

The majority of the current lower-division CM classes are being taught at the University Center (UC) campus in two dedicated computer labs that are equipped with computer-aided drafting, project management and project cost estimating software as well as plotters, printers, and the department library. One other computer lab classroom at the UC is available to CM students and is shared with programs offered by Kenai Peninsula College. Classes that do not require the use of computers, though limited in number, are taught in general use classrooms, usually at the UC. The new upper-division courses will utilize the same facilities. General classroom space for the program will be assigned through the usual university processes. Additional facilities are not required at this time.

Indirect Costs to Other Units

The BSCM program will require students to complete the UAA general university requirements and general education requirements (GER) for baccalaureate degrees. Additionally, BSCM students will be required to take the following courses from other units:

College of Business and Public Policy

- ACCT 201 – Principles of Accounting
- ACCT 202 – Principles of Managerial Accounting
- ECON 201 – Macro Economics
- ECON 202 – Micro Economics
- BA 241 – Business Law

School of Engineering

- GEO 155 – Fundamentals of Surveying
- ES 411 – Northern Design

Notably, this curriculum proposal also includes a new CM course that is a Tier 3 GER integrated capstone course that will be open to all students with junior standing: CM 382 – Sustainability in Construction.

Four Year Course Offering Plan
Program: Construction Management
Implementation Date: Fall 2007 (BSCM)

Course (Prefix and Number)	AY 2008			AY 2009			AY 2010			AY 2011		
	F/07	SP/08	SU	F/08	SP/09	SU	F/09	SP/10	SU	F/10	SP/11	SU
CM A101 (4)*	Bennett 4	Bennett 4	ADJ 4	Bennett 4	Bennett 4	ADJ 4	Bennett 4	Bennett 4	ADJ 4	Bennett 4	Bennett 4	ADJ 4
CM A101 (4)*	Dedych 4	Dedych 4		Dedych 4	Dedych 4		Dedych 4	Dedych 4		Dedych 4	Dedych 4	
CM A102 (3)*	Bennett 3	Bennett 3	ADJ 3	Bennett 3	Bennett 3	ADJ 3	Bennett 3	Bennett 3	ADJ 3	Bennett 3	Bennett 3	ADJ 3
CM A102 (3)*	NFTF 3	NFTF 3		NFTF 3	NFTF 3		NFTF 3	NFTF 3		NFTF 3	NFTF 3	
CM A123 (3)*		Ketner 3		Ketner 3			Ketner 3			Ketner 3	Ketner 3	
CM A123 (3)*	Ketner 3	NFTF 3		NFTF 4	Ketner 3		NFTF 3			Ketner 3	NFTF 3	
CM A142 (4)*	Dedych 4	Dedych 4		Dedych 4	Dedych 4		Dedych 4	Dedych 4		Dedych 4	Dedych 4	
CM A163 (3)		Ketner 3					Ketner 3				Ketner 3	
CM A201 (3)				Ketner 3				Ketner 3				
CM A202 (3)	NFTF 3				NFTF 3					NFTF 3		
CM A205 (3)	NFTF 3				NFTF 3					NFTF 3		
CM A213 (4)*	McKay 4			NFTF 4	McKay 4			NFTF 4		McKay 4		
CM A213 (4)*				McKay 4				McKay 4				
CM A231 (4)*		McKay 4		NFTF 4			NFTF 4	NFTF 4			McKay 4	
CM A231 (4)*				McKay 4				McKay 4				
CM A263 (3)	NFTF 3				NFTF 3					NFTF 3		
CM A301 (3)	Ketner 3	Ketner 3		Ketner 3	Ketner 3		Ketner 3	Ketner 3		Ketner 3	Ketner 3	
CM A313 (3)		Ketner 3			Ketner 3			Ketner 3			Ketner 3	
CM A331 (3)	Dedych 3	Dedych 3		Dedych 3	Dedych 3		Dedych 3	Dedych 3		Dedych 3	Dedych 3	
CM A401 (3)		Dedych 3			Dedych 3			Dedych 3			Dedych 3	
CM A422 (3)		Callahan 3			Callahan 3			Callahan 3			Callahan 3	
CM A440 (3)		NFTF 3			NFTF 3			NFTF 3			NFTF 3	
CM A450 (3)		Callahan 3			Callahan 3			Callahan 3			Callahan 3	
CM A460 (3)	Callahan 3			Callahan 3			Callahan 3			Callahan 3		

Four Year Course Offering Plan
Program: Construction Management
Implementation Date: Fall 2007 (BSCM)

Course (Prefix and Number)	AY 2008				AY 2009				AY 2010				AY 2011													
	F/07		SP/08	SU	F/08		SP/09	SU	F/09		SP/10	SU	F/10		SP/11	SU										
EVENING																										
CM A101 (4)*	ADJ	4	ADJ	4			ADJ	4	ADJ	4			ADJ	4	ADJ	4										
CM A102 (3)*	Ketner	3	ADJ	3			ADJ	3	Ketner	3			ADJ	3	ADJ	3										
CM A123 (3)*			NFTF	3			ADJ	3							ADJ	3										
CM A142 (4)*			ADJ	4			ADJ	4			ADJ	4			ADJ	4	ADJ	3								
CM 163 (3)	Ketner	3	Ketner	3			Ketner	3			Ketner	3			Ketner	3	ADJ	3								
CM A213 (4)*			ADJ	4			ADJ	4				ADJ	4													
CM A231 (4)*			ADJ	4			ADJ	4				ADJ	4													
EAGLE RIVER																										
CM 201 (3)	ADJ	3					ADJ	3			ADJ	3	Ketner	3			ADJ	3								
CM 202 (3)			ADJ	3								ADJ	3			ADJ	3	ADJ	3							
CM 205 (3)			ADJ	3								ADJ	3			ADJ	3	ADJ	3							
CM 263 (3)	ADJ	3									ADJ	3			ADJ	3										
CM Credits	27		33				18		39			21		33			33		33							
AET/ CM CL Credits	32		50		7		63		32			7		39			49		7	42			38			7
Total Credits	59		83		7		81		71			7		60			82		7	75			71			7

*AET/CM cross-listed

CM		NFTF	Courses expected to be delivered by new full-time faculty
AET/CM		ADJ	Courses expected to be delivered by adjunct faculty

BSCM & AAS-CM
PROPOSED CATALOG COPY

CONSTRUCTION MANAGEMENT

<http://edit.uaa.alaska.edu/ctc/>

University Center (UC), Room 130, (907) 786-6423

The Construction Management (CM) provides comprehensive preparation and continuing education to meet the growing need for highly trained and educated construction management professionals. Construction managers plan, direct, and are responsible for managerial oversight of construction projects. They are responsible for coordinating and managing people, materials, and equipment; budgets, schedules, and contracts; and for the safety of employees and the general public. Construction managers work closely with architects, engineers, owners, and the other contractors on a construction project. Construction managers determine construction means and methods and the most cost-effective plans and schedules. They control construction costs, administer project changes and monitor work progress while ensuring compliance with the project design. Construction managers work in all sectors of the construction industry, for both public and private owners, on projects that range from small multifamily projects to skyscrapers and from rural roads to major highways and bridges. The construction manager's duties are varied, challenging, and rewarding.

The Construction Management program at UAA was developed with input from Alaska contractors and professional industry organizations to provide students with a broad knowledge of construction processes and techniques. The curriculum has been designed in accordance with the requirements of the American Council for Construction Education (ACCE). CM graduates understand basic business principles and possess broad knowledge of the technical and operational aspects of the construction industry. Graduates are able to function both in the construction office and on the job site.

The wide diversity in the construction management profession creates a similar diversity of employment opportunities for graduates. Associate degree graduates are prepared for entry-level positions in varying construction management roles for contractors in both home office and project office/field situations. Bachelor's degree graduates are prepared for a wide variety of professional-level employment opportunities in construction companies, construction management consulting firms, and in the offices of government and project owner agencies. The Associate of Applied Science (AAS-CM) degree requires 4 to 5 semesters to complete. The Bachelor of Science (BSCM) degree requires 8 to 9 semesters to complete.

ADVISING

Students are encouraged to consult the faculty in the Construction Management program for assistance in designing their course of study to ensure all prerequisites have been met and that university and major degree requirements are understood and followed.

All students are strongly encouraged to meet with their academic advisor each semester for the purpose of reviewing their academic progress and planning future courses. It is particularly important for students to meet with their advisor whenever academic difficulties arise. Please call (907) 786-6423 to arrange an appointment with an academic advisor.

The Recommended Course Sequence for the current semester and other advising information may be found on the program website.

<http://edit.uaa.alaska.edu/ctc/>

PREPARATION

Students seeking a degree in Construction Management should prepare for entrance into the program by completing the following high school courses:

Mathematics	Algebra II (Skill level as demonstrated by ACT, SAT, or UAA approved placement test to qualify for enrollment in MATH A105)
English	Composition (Skill level as demonstrated by ACT, SAT, or UAA placement test to qualify for enrollment in ENGL A111 – Fundamentals of Written Communication)

The University offers courses to help students without this preparation to meet the Math and English skill levels required in the Construction Management program. Insufficient preparation will increase the number of semesters required to complete the degree.

ASSOCIATE OF APPLIED SCIENCE, CONSTRUCTION MANAGEMENT

PROGRAM OUTCOMES

Graduates will be able to:

- Analyze, interpret and understand the fundamental processes used to create project designs and construction documents.
- Define the roles, relationships and responsibilities of the participants in the design and construction process.
- Use clear and effective written and oral communication methods to facilitate interaction with all project team participants.
- Define the methods, materials, and techniques used in the design and construction of buildings and civil works.
- Interpret construction documents to accurately predict project costs and assign resources.
- Utilize construction operations planning methods to create accurate project schedules and monitor productivity.
- Interpret and apply building codes in construction processes.
- Proficiently operate industry-standard software for computer-aided design and drafting (CADD), project cost estimating, and project scheduling.
- Utilize a working knowledge of safety, health, and environmental issues related to construction activities.

ADMISSION REQUIREMENTS

1. Satisfy the requirements under Admission to Certificate and Associate Degree Programs in Chapter 7, “Academic Standards and Regulations”.
2. Certain courses require prerequisites or faculty permission. See an academic advisor for further information.

GRADUATION REQUIREMENTS

In order to receive the Associate of Applied Science in Construction Management, students must achieve a grade of “C” or better in all courses required for the degree.

COURSE REQUIREMENTS

1. Complete the General University Requirements for Associate of Applied Science Degrees located at the beginning of this chapter.
2. Complete the General Course Requirements for Associate of Applied Science degrees located at the beginning of this chapter (15 credits).

REQUIRED SUPPORT COURSES

1. Complete the following required support courses:

ACCT A201	Principles of Financial Accounting	3
ACCT A202	Principles of Managerial Accounting	3

*PHYS A123 and A123L	Basic Physics 1 w/lab	4
*ENGL A212	Technical Writing	3
*MATH A107	College Algebra (4) and	
*MATH A108	Trigonometry (3) or	
*MATH A109	Precalculus (6)	6/7

**Note: Required support courses may also be used to satisfy General Course Requirements.*

MAJOR REQUIREMENTS

1. Complete the following required core courses:

CM A101	Fundamentals of CADD for Building Const.	4
CM A102	Methods of Building Construction	3
CM A123	Codes and Standards	3
CM A142	Mechanical and Electrical Technology	4
CM A163	Building Construction Cost Estimating	3
CM A201	Construction Project Management I	3
CM A202	Project Planning and Scheduling	3
CM A205	Construction Safety	3
CM A213	Civil Technology	4
CM A231	Structural Technology	4
CM A263	Civil Construction Cost Estimating	3
CM A295	CM Internship	3

2. A total of 65/66 credits is required for the degree.

BACHELOR OF SCIENCE, CONSTRUCTION MANAGEMENT

PROGRAM OUTCOMES

Graduates will be able to:

- Manage the principal resources of a construction industry organization including its workers, equipment, time, and budgets.
- Represent the role of the constructor in the multi-discipline team responsible for managing construction projects.
- Assess project risk and evaluate alternate project delivery systems for project procurement and construction.
- Communicate effectively with project design professionals during the planning phases of design-build projects and throughout the construction phase of all projects.
- Utilize knowledge of materials, methods, and equipment operations to plan, control and analyze the results of construction processes.
- Manage construction operations in unique and changing conditions to produce measured results that meet stated quality criteria and overall project goals.

ADMISSION REQUIREMENTS

1. Satisfy the requirements under Admission to Baccalaureate Programs in Chapter 7, "Academic Standards and Regulations".
2. Certain courses require prerequisites or faculty permission. See an academic advisor for further information.

GRADUATION REQUIREMENTS

In order to receive the Bachelor of Science in Construction Management, students must achieve a grade of "C" or better in all courses required for the degree.

GENERAL UNIVERSITY REQUIREMENTS

1. Complete the General University Requirements for All Baccalaureate Degrees located at the beginning of this chapter.
2. Complete the General Education Requirements for Baccalaureate Degrees at the beginning of this chapter.

REQUIRED SUPPORT COURSES

1. Complete the following support courses:

ACCT A201	Principles of Financial Accounting	3
ACCT A202	Principles of Managerial Accounting	3
BA/JUST A241	Business Law I	3
*ECON A201	Macro Economics	3
*ECON A202	Micro Economics	3
*ENGL A212	Technical Writing	3
GEO A155	Fundamentals of Surveying	3
*MATH A107	College Algebra (4)	
and		
*MATH A108	Trigonometry (3)	
or		
*MATH A109	Precalculus (6)	6/7
*PHIL A301	Ethics	3
*PHYS A123 and A123L	Basic Physics I w/lab	4
2. Complete one of the following science courses:

*CHEM A105 and A105L	General Chemistry I with lab (4)	
or		
*GEOL A111	Physical Geology (4)	4
3. Complete one additional science course at or above the
*100-level in CHEM, ENVI, GEOL, or PHYS 3
4. Complete one of the following:

*MATH A200	Calculus (4)	
*MATH A272	Applied Calculus (3)	
*STAT A253	Applied Statistics for the Sciences (4)	3/4

**Note: Required Support Courses may also be used to satisfy General Education Requirements.*

MAJOR REQUIREMENTS

1. Complete the following required core courses:

CM A101	Fundamentals of CADD	4
CM A102	Methods of Building Construction	3
CM A123	Codes and Standards	3
CM A142	Mechanical and Electrical Technology	4
CM A163	Building Construction Cost Estimating	3
CM A201	Construction Project Management I	3
CM A202	Project Planning and Scheduling	3
CM A205	Construction Safety	3
CM A213	Civil Technology	4
CM A231	Structural Technology	4
CM A263	Civil Construction Cost Estimating	3
CM A301	Construction Project Management II	3
CM A313	Soils in Construction	3
CM A331	Statics & Strengths of Materials	3
CM A401	Construction Law	3

CM A422	Sustainability in the Built Environment^	3
CM A440	Financial Management for Construction	3
CM A450	Const. Management Professional Practice^	3
CM A460	Const. Equipment Management and Methods	3
CM A495	Advanced CM Internship	3

^Tier 3 General Education Requirement, Integrative Capstone.

A total of 123/125 credits is required for the degree of which 42 credits must be upper division.

ACCREDITATION

All necessary steps will be taken for successful accreditation by the American Council for Construction Education (ACCE).

FACULTY

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Course Descriptions – New CM Courses

Course Number: CM A301

Course Title: Construction Project Management II

Credits: 3

Course Description:

Analyzes advanced subjects in construction project management. Includes project procurement, project delivery methodology, managing project change, quality control, claims and disputes, and labor relations.

Course Number: CM A313

Course Title: Soils in Construction

Credits: 3

Course Description:

Examines the properties and classifications of soils encountered and used in construction. Includes soils investigation, soils stress analysis, embankment construction, and excavation works and supports.

Course Number: CM A331

Course Title: Statics and Strengths of Materials

Credits: 3

Course Description:

Analyzes the forces and the mechanics of materials for structural elements and structural assemblies. Includes the fundamentals of statics; stress, strain, and deformation; shear and bending moment stresses in beams; and column analysis.

Course Number: CM 401
Course Title: Construction Law
Credits: 3

Course Description:

Examines the significant legal topics affecting general contractors, subcontractors, project owners and surety bond agents. Integrates legal issues with design and construction services, focusing on risk management and liability awareness.

Course Number: CM A422
Course Title: Sustainability in the Built Environment
Credits: 3

Course Description:

Examines sustainability concepts and the implementation of sustainability principles in the design and construction of the built environment. Evaluates human-constructed development and resource preservation challenges in the context of the local and global natural environment.

Course Number: CM A440
Course Title: Financial Management for Construction
Credits: 3

Course Description:

Analyzes financial management topics relevant to the construction management professional, including the interpretation of financial statements, financial ratios, applications of engineering economy, cash flow analysis, construction financing, and cost information systems.

Course Number: CM A450
Course Title: Construction Management Professional Practice
Credits: 3

Course Description:

Integrates educational and construction management principles using case studies. Emphasizes teamwork and professional competency. Includes the evaluation of project goals, conditions, and design documents to produce a plan for delivery and control.

Course Number: CM A460
Course Title: Construction Equipment Management & Methods
Credits: 3

Course Description:

Analyzes the management of construction equipment and methods employed in different sectors of the construction industry including buildings, heavy-highway, and utilities construction. Includes earthmoving operations, appropriate equipment selection, operating costs, and fleet management.

Course Number: CM A495
Course Title: Advanced Construction Management Internship
Credits: 3

Course Description:

Provides career development through self-assessment and career exploration by placement in a construction management home or field office. Intern will perform duties directly related to construction management functions.

Questions about this Summary may be directed to: Jeffrey C. Callahan, Assistant Professor of Construction Management. 907-786-6425, or e-mail to Callahan@uaa.alaska.edu