

The completed and signed proposal should be submitted by the Dean's Office to: [curriculumplanning@asu.edu](mailto:curriculumplanning@asu.edu). Before academic units can advertise undergraduate minors or include them in their offerings as described in the university catalogs, they must be recommended for approval by the Senate Curriculum and Academic Programs Committee and approved by the Executive Vice President and Provost of the University.

**Definition and minimum requirements:**

These are the minimum requirements for approval. Individual undergraduate minors may have additional requirements.

A minor is an approved, coherent focus of academic study in a single discipline, other than the student's major, involving substantially fewer hours of credit than a corresponding major. Certain major and minor combinations may be deemed inappropriate either by the college or department of the major or minor. Inappropriate combinations include (but would not be limited to) ones in which an excessive number of courses in the minor are simultaneously being used to fulfill requirements of the student's major.

A minor:

- Requires a minimum of 15 semester hours of which at least 9 semester hours must be upper division
- Is not intended for students pursuing a major in the department which offers the minor

<b>College/School/Institute:</b>	Ira A. Fulton Schools of Engineering
<b>Department/Division/School:</b>	School of Sustainable Engineering and the Built Environment
<b>Proposing Faculty Group (if applicable):</b>	Del E. Webb School of Construction
<b>Proposed Minor Name:</b>	Minor in Construction Management
<b>Requested effective catalog year? 2014-15</b>	
For deadline dates see: Curriculum Workflow Calendars.	

**Delivery method:** On-campus only (ground courses and/or iCourses)

*Note: Once students elect a campus or On-line option, students will not be able to move back and forth between the on-campus and the ASU Online options. Approval from the Office of the Provost and Philip Regier (Executive Vice Provost and Dean) is required to offer programs through ASU Online.*

**Campus/Locations:** indicate all locations where this program will be offered.

Downtown Phoenix     Polytechnic     Tempe     West    Other:

**Proposal Contact**

<b>Name:</b>	Allan Chasey	<b>Title:</b>	Chair, Construction Mgt
<b>Phone number:</b>	5-7437	<b>Email:</b>	allan.chasey@asu.edu

**DEAN APPROVAL(S)**

This proposal has been approved by all necessary unit and College/School levels of review. I recommend implementation of the proposed organizational change.

**College/School/Division Dean name:** James S. Collofello

**Signature**

**Date:** 9/10/2013

**College/School/Division Dean name:**

*(if more than one college involved)*

**Signature**

**Date:** / /20

*Note: An electronic signature, an email from the dean or dean's designee, or a PDF of the signed signature page is acceptable.*

**1. Overview**

**A. Description**

Provide a brief description of the proposed minor.

This minor will be comprised of course work in construction management processes incorporating technology and industry practices required to ensure a quality built environment. Due to industry demands for increased numbers of skilled personnel, this minor will provide much needed supplementary knowledge for architects, engineers, and business majors as well as students majoring in sustainability.

**B. Why should this be a minor rather than a concentration?**

This minor will be comprised of course work in construction management processes incorporating technology and industry practices required to ensure a quality built environment. This minor will be good for Business, Civil, Architecture and Sustainability students.

**C. Affiliation**

If the minor is affiliated with a degree program, include a brief statement of how it will complement the program. If it is not affiliated with a degree program, incorporate a statement as to how it will provide an opportunity for a student to gain knowledge or skills not already available at ASU.

Due to industry demands for increased numbers of skilled personnel, this minor will provide much needed supplementary knowledge for architects, engineers, and business majors as well as students majoring in sustainability.

**D. Demand**

Explain the need for the new minor (e.g., market, student demand, interdisciplinary considerations).

The construction industry is experiencing a shortage of qualified personnel. Despite the economic downturn, with a corresponding slowdown of construction work, the shortage of skilled and experienced workers in the industry is growing. As noted by the Chartered Institute of Building's (CIOB) third annual skills survey, 77% of the respondents indicated that there is a skills shortage in construction despite the economic downturn and 78% feel that the loss of skills in the industry will hurt the recovery when the economy improves.

**E. Projected Enrollment**

What are enrollment projections for the first three years?

	<b>1<sup>st</sup> Year</b>	<b>2<sup>nd</sup> Year</b> (Yr. 1 continuing + new entering)	<b>3<sup>rd</sup> Year</b> (Yr. 1 & 2 continuing + new entering)
Number of Students (Headcount)	5	10	25

**2. Support and Impact**

**A. Faculty governance**

Provide a supporting letter from the chair of the academic unit verifying that the proposed minor has received faculty approval through appropriate governance procedures in the unit and that the unit has the resources to support the minor as presented in the proposal, without impacting core program resources.

Attached

**B. Other related programs**

Identify other related ASU programs and outline how the new minor will complement these existing ASU programs. (If applicable, statements of support from potentially-affected academic unit administrators need to be included with this proposal submission.)

The School anticipates being able to attract 15-25 students per year who would pursue the minor if publicized adequately to Architecture, Civil Engineering, SOS and BIS programs.

C. Letter(s) of support

Provide a supporting letter from each college/school dean from which individual courses are taken. Attached

**3. Academic Curriculum and Requirements**

A. Knowledge, competencies, and skills

List the knowledge, competencies, and skills (learning outcomes) students should have when they complete this proposed minor. Examples of program learning outcomes can be found at (<http://www.asu.edu/oue/assessment.html>).

- Understand construction drawings and how they are organized
- Know how to read construction drawings
- Identify various components of major systems (Foundations, Structures, HVAC, electrical, plumbing) and how they are portrayed on a set of working drawings.
- Gain command of the vernacular of building design and construction including terminology, units of measure, standard designations, sizes, graduations, testing methods, reference standards, and regulatory codes.
- Understand and describe the basic processes of designing and constructing a building.
- Basic understanding of various mechanical, electrical and plumbing systems and vertical transportation.
- Learn or improve teamwork and team-building skills through experience.
- Competent Persons / Managing Safety and Health
- Obtain 30 Hour OSHA Safety Training Card
- Organize, develop and comprehend a quantity takeoff. To do quantity surveys (takeoffs) from the drawings,
- Understand how costs are assigned to the various work items/tasks.
- Understand the overall estimating process—bidding.
- Acquire a solid, comprehensive “working” construction vocabulary
- Understand the role of the Estimator in the construction process—appreciate how valuable this role is to the success of the company—and be keenly aware of the ethical issues that the Estimator faces.
- Develop a basic understanding of the project management process, including defining, planning, executing, controlling and closing and the use of technology to support the construction process.
- Gain a general knowledge how BIM and LEED integrate with project delivery strategies.

B. Provide a description of the curricular requirements for the minor. Be specific in listing required courses as well as electives and specify the total minimum number of hours required for the minor. Please attach one or more model programs of study to illustrate the choices students might make, if appropriate.

Required Minor Courses				
Prefix	Number	Title	Is this a new course?	Credit Hours
CON	244	Working Drawing Analysis	No	2
CON	271	Construction Safety	No	3
CON	383	Construction Estimating (No pre-reqs for minor)	No	4
CON	453	Construction Project Management I OR CON 494, Heavy Const Proj Mgmt	No	3
Section Sub-total				12
Elective Minor Courses				
Prefix	Number	Title	Is this a new course?	Credit Hours
CON	243	Heavy Construction Equipment, Methods and Materials (If selected, other elective must be upper division)	No	3
CON	252	Building Construction Methods, Materials, and Equipment (If selected, other elective must be upper division)	No	3
CON	448	Sustainable Construction	No	3

CON	495	Construction Planning and Scheduling	No	3
CON	496	Construction Contract Administration	No	3
			Section Sub-total	6
<b>Other Minor Requirements</b>				
E.g. – Capstone experience, internship, clinical requirements, field studies, foreign language skills as applicable				Credit Hours
			Section Sub-total	
<b>Total minimum credit hours required for the Minor</b>				<b>18</b>

C. Minimum residency requirement  
How many hours of the minor must be ASU credit?  
12

D. New Courses  
Provide a brief course description for each new course. None

Note: All new required courses should be submitted in Curriculum Changemaker and ready for Provost’s Office approval before this certificate is put on Curriculum and Academic Programs Committee (CAPC) agenda

**4. Administration and Resources**

- A. Describe the procedures and any qualifications for enrollment in the minor.  
**Each student choosing to minor in Construction Management would be assigned a faculty advisor. The program director would initially serve as the primary advisor for students pursuing a minor.**
- B. Describe the advising procedures as well as measures for verification of completion of the minor.  
Each Student choosing the minor in Construction Management would be assigned a faculty advisor. The program director would initially serve as the primary advisor for students pursuing a minor, but students would be allowed to select a different advisor if mutually desired by the student and professor. The program director will evaluate CON course prerequisite requirements for each student on an individual basis. A student must maintain a 2.5 GPA in all courses in the minor to receive the minor. Interested students should consult with a SSEBE advisor to verify eligibility and to review all courses required for the minor. To schedule an advising appointment, please call the SSEBE advising office at (480) 965-0595. Each student would also have access to the SSEBE Undergraduate Staff Advising staff, which would both advise the student and verify their completion of the minor.
- C. What are the resource implications for the proposed minor, including any projected budget needs? Will new books, library holdings, equipment, laboratory space and/or personnel be required now or in the future? If multiple units/programs will collaborate in offering this minor, please discuss the resource contribution of each participating program. Letters of support must be included from all academic units that will commit resources to this minor.  
No new resources would be needed to establish or maintain the Minor in Construction Management.

**D. Primary Faculty**

List the primary faculty participants regarding this proposed certificate. For interdisciplinary certificates, please include the relevant names of faculty members from across the University.

<b>Name</b>	<b>Title</b>	<b>Area(s) of Specialization as they relate to proposed certificate</b>
Al Chasey	Chair, Professor	Working and Drawing
Edwin Weaver	Senior Lecturer	Safety
Ken Sullivan	Associate Professor	Estimating
Aaron Cohen	Lecturer	Heavy

**5. Additional Materials**

- A. Appendix**  
Complete and attach the Appendix document.
- B. Program of study**  
Provide one or more model programs of study (if appropriate).
- C. Attach other information that will be useful to the review committees and the Office of the Provost.**

## Model Programs of Study for Construction Management Minor

### Student #1 –Sustainability Student

CON 244 Working Drawing Analysis

CON 271 Construction Safety

CON 383 Construction Cost Estimating

CON 453 Project Management I

Electives

CON 252 Building Materials, Methods, and Equipment

CON 448 Sustainable Construction

18 Hrs

### Student #2 – Business Student

CON 244 Working Drawing Analysis

CON 271 Construction Safety

CON 383 Construction Cost Estimating

CON 453 Project Management I

Electives

CON 495 Planning and Scheduling

CON 496 Construction Contracts

18 hrs

Student #3 – Civil Engineering Student

CON 244 Working Drawing Analysis

CON 271 Construction Safety

CON 383 Construction Cost Estimating

CON 453 Project Management I

Electives

CON 252 Building Materials, Methods, and Equipment

CON 495 Planning and Scheduling

18 hrs


September 10, 2013

To Whom It May Concern:

The proposed Minor in Construction Management has been reviewed and has received approval through appropriate governance procedures in the Ira A. Fulton Schools of Engineering. I support implementation of this minor effective fall 2014.

If you have any questions regarding this matter, please feel free to contact Jeremy Helm ([Jeremy.Helm@asu.edu](mailto:Jeremy.Helm@asu.edu)) in my office.

Sincerely,



James S. Collofello  
Associate Dean of Academic and Student Affairs  
Ira A. Fulton Schools of Engineering

cc: Jeremy Helm, Director, Academic Administration & Student Success



**APPENDIX  
OPERATIONAL INFORMATION FOR MINORS**

(This information is used to populate the Degree Search/catalog website.

Please consider the student audience in creating your text.)

**1. Proposed Minor Name:** Construction Management

**2. Description (150 words maximum)**

This minor will be comprised of course work in construction management processes incorporating the technology and industry practices required to ensure a quality built environment. Due to industry demands for increased numbers of skilled personnel, this minor will provide much needed supplementary knowledge for architects, engineers and business majors as well as students majoring in sustainability.

**3. Contact and Support Information**

Building Name, code and room number: ( <i>Search ASU map</i> )	ECG 252
Program office telephone number: ( <i>i.e. 480/965-2100</i> )	480/965-595
Program Email Address:	sebe.advising@asu.edu
Program Website Address:	<a href="http://ssebe.engineering.asu.edu/">http://ssebe.engineering.asu.edu/</a>

**4. Program Requirements:** Provide applicable information regarding the program such as curricular restrictions or requirements, specific course lists, or academic retention requirements.

Core Required:

CON 244 Working Drawing Analysis (2)  
CON 271 Construction Safety (3)  
CON 383 Construction Estimating (4)  
CON 453 Construction Project Management I (3) OR CON 494 Heavy Const Proj Mgmt

Electives

CON 252 Building Construction Methods, Materials, and Equipment (3) OR CON 243 Heavy Const  
Equipment, Methods and Materials (3)  
CON 448 Sustainable Construction (3)  
CON 495 Construction Planning and Scheduling (3)  
CON 496 Construction Contract Administration (3)

**5. Additional Enrollment Requirements** If applicable list any additional enrollment requirements students must complete

Students in most majors may pursue one or more minors and, upon successful completion of the prescribed course work, have that accomplishment officially recognized on the ASU transcript at graduation if the college or department of the minor officially certifies, through established verification procedures, that all requirements for the minor have been met and the college (and, in certain colleges, the department) of the student's major allows the official recognition of the minor.

A student wishing to pursue a specific minor should consult an academic advisor in the unit offering that minor to ensure that an appropriate set of courses is taken. The student should also consult an academic advisor in the college or department of the major to make sure the college or department of the major allows the recognition of the minor.

Note: Certain major and minor combinations may be deemed inappropriate either by the college or department of the major or minor. Courses taken as part of a minor may not count toward both the major degree and the minor. Please contact the department for more information.

**6. Delivery/Campus Information Delivery:**

On-campus only (ground courses and/or iCourses)

*Note: Once students elect a campus or On-line option, students will not be able to move back and forth between the on-campus and the ASU Online options. Approval from the Office of the Provost and Philip Regier (Executive Vice Provost and Dean) is*

*required to offer programs through ASU Online.*

7. **Campus/Locations:** indicate all locations where this program will be offered.

Downtown Phoenix     Polytechnic     Tempe     West    Other:

TO: Dr. James Collofello  
Associate Dean for Academic Affairs  
Ira A Fulton Schools of Engineering  
Arizona State University

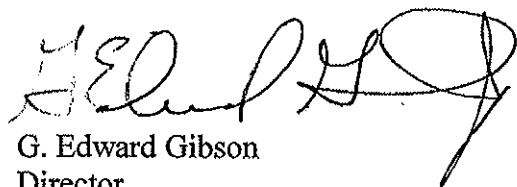
From: Dr. G. Edward Gibson

Subject: Proposed Minor in Construction Management

The proposed Minor in Construction Management has been reviewed by the faculty of the Del E Webb School of Construction and approved in accordance with appropriate governance procedures within the unit.

The unit has the resources to support the minor as presented in the proposal, without impacting core course resources as all of the minor courses are currently being offered within the School's Construction Management program.

Sincerely,



G. Edward Gibson  
Director  
School of Sustainable Engineering  
and the Built Environment

**From:** Craig Barton <[Craig.Barton@asu.edu](mailto:Craig.Barton@asu.edu)>  
**Date:** May 7, 2013, 5:46:39 AM MST  
**To:** Allan Chasey <[achasey@asu.edu](mailto:achasey@asu.edu)>  
**Subject:** Re: Proposal for Construction Management Minor

Dear Allan,

I have reviewed the Del E Webb School of Construction's proposal for an undergraduate minor in Construction Management.

I am impressed by the proposal and foresee no negative impacts on degree offerings at The Design School.

Please let us know when the minor has been approved.

Best Regards,

Craig Barton

**Craig Evan Barton,**  
Director + Professor

**The Design School | The Herberger Institute for Design and the Arts**  
Arizona State University  
P.O. Box 871605 | Tempe, AZ | 85287-1605  
480.965.3536 v | 480.965.0968 f | [craig.barton@asu.edu](mailto:craig.barton@asu.edu)  
skype: cebarton42  
<http://design.asu.edu/>

Allan D. Chasey, PhD, PE, LEED AP  
Program Chair and  
Sundt Professor of Alternative Delivery and Sustainable Development  
Del E. Webb School of Construction  
Arizona State University  
PO Box 870204  
Tempe, AZ 85287-0204

Dear Professor Chasey,

We have reviewed your proposal for a minor in Construction Management and confirm it will have no impact on our degree programs in the School of Sustainability. We wish you every success with the new minor.

Sincerely,

Christopher Boone

Associate Dean

Interim Dean (effective 1 July)

Dear Allan,

We have reviewed this proposal and have no concerns from the W. P. Carey School of Business. This will have no impact on our programs. Thank you for providing an opportunity for us to review this.

Best wishes,

Kay

Kay A. Faris  
Associate Dean  
W. P. Carey School of Business  
Arizona State University  
Tempe, AZ 85287-3406  
480-965-7587 (voice)  
480-965-3846 (fax)

**From:** Michael Mamlouk <[mamlouk@asu.edu](mailto:mamlouk@asu.edu)>  
**Date:** May 1, 2013, 2:27:56 PM MST  
**To:** Allan Chasey <[achasey@asu.edu](mailto:achasey@asu.edu)>  
**Subject:** RE: Proposal for Construction Management Minor

Dear Al,

This minor will have no impact on degree offerings of the Civil, Environmental and Sustainable Engineering program.

Mike Mamlouk, Ph.D., P.E., F.ASCE  
Professor and Chairman  
Civil, Environmental and Sustainable Engineering Program  
School of Sustainable Engineering & the Built Environment  
Arizona State University  
Tempe, AZ 85287-5306  
Phone: 480-965-2892  
Fax: 480-965-0557