



**THE OHIO STATE
UNIVERSITY**

Construction Systems Management

**SELF STUDY FOR AMERICAN COUNCIL FOR
CONSTRUCTION EDUCATION**

ACCREDITATION

June 19, 2014

ACCE
American Council for Construction
Education

1717 North Loop 1604 East, Suite 320
San Antonio, TX 78232-1570

Self-Evaluation Study
(2013-14)

For

Food, Agricultural and Biological Engineering
of
The Ohio State University

The Construction Systems Management Program
Submitted By

Contact person:

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June 19, 2014



April 28, 2014

Mr. Michael Holland
American Council for Construction Education
1717 North Loop
1604 East, Suite 320
San Antonio, TX 78232

Dear Mr. Holland:

Enclosed is the Self Study Report for the Construction Systems Management program offered by the Department of Food, Agricultural and Biological Engineering at The Ohio State University. We are proud of this program and our graduates who have gone on to serve the construction industry.

Included in this mailing are four, USB flash drives and the original A-1 form with signatures. Each of the USB drives contains electronic copies of the self-study report, current institution catalogue and the A-1 form with signatures.

This report describes the current status of the program including sections on organization and administration of the program, the curriculum, faculty and staff, facilities, relations with industry, information published to the public, and quality improvement plan. Detailed information is provided in the appendices to supplement descriptions provided in the report.

Thank you for the opportunity to submit the Self Study Report in partial fulfillment of the requirements for accreditation. We look forward to your comments and suggestions for improvement of our CSM program.

Respectfully,

Scott A. Shearer, Ph.D., P.E.
Professor and Chair

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Volume I

Program Self-Study Report Construction Systems Management The Ohio State University

I. INTRODUCTION

A. Accreditation

1. Name of regional organization by which the institution is accredited.

The Ohio State University (OSU) is accredited by the Higher Learning Commission of the North Central Association of Colleges and Schools. See <http://oaa.osu.edu/assets/files/documents/OhioStateSelfStudyReport.pdf> to read OSU's self-study report for its most recent re-accreditation in 2007.

2. Is the construction program, or portion thereof, accredited by another accrediting agency?

No. The Construction Systems Management program was awarded candidate status by the American Council for Construction Education (ACCE) in August 2013 and is not accredited through any other agency.

3. List accrediting agencies that currently accredit programs at the institution.

The undergraduate engineering degree program in the Food, Agricultural, and Biological Engineering is accredited by the Accreditation Board for Engineering and Technology (ABET). A list of accredited programs and acceptance agencies for the university can be found on Office of Academic Affairs website (<http://oaa.osu.edu/irp/assessment/accred.php>).

B. Institution

Provide background information about the institution. Describe its history, mission, size, purpose, and organizational structure in general terms.

Ohio State's roots go back to 1870, when the Ohio General Assembly established the Ohio Agricultural and Mechanical College. The new college was made possible through the provisions of the Land-Grant Act, signed by President Abraham Lincoln on July 2, 1862. The purpose/mission of OSU is to advance the well-being of the people of Ohio and the global community through the creation and dissemination of knowledge. The overarching goal of the University is to be among the world's truly great universities.

The Ohio State University owned 16,123 acres of land as of October of 2013; OSU's Columbus campus occupies 1,777 acres and has 594 buildings. The total university enrollment was 63,964 in October 2013, including the Columbus campus enrollment of 57,466 (<http://www.osu.edu/osutoday/stuinfo.php>). A president oversees the University and reports to a

board of trustees. Additional details about The Ohio State University can be found at <http://oaa.osu.edu/index.php>.

The Construction Systems Management undergraduate program is offered by the Department of Food, Agricultural and Biological Engineering (FABE), an academic unit within the College of Food, Agricultural and Environmental Sciences (CFAES) at The Ohio State University. Academically, the Department is also considered part of the College of Engineering. Both colleges are among the six professional colleges at OSU. There are 14 colleges total at OSU.

The Ohio State University, along with 16 other public and 3 private institutions in the state of Ohio, recently converted from the quarter system to semester. The first OSU semester was in June, 2012.

C. Construction Unit

1. Provide background information about the construction program—i.e., describe its origins, developmental history, mission, goals, and current size and organizational structure.

In 1991, the (then) Agricultural Engineering Department revised the Agricultural Mechanization and Systems major of the B.Sc. in Agriculture program by splitting it into two: Agricultural Systems Management and Construction Systems Management (CSM), both offered under the same B.Sc. in Agriculture degree program. In 1996, the department changed its name to Food, Agricultural, and Biological Engineering (FABE). The CSM program had only about 15 or 20 students in 1997, but over the years, the program expanded to include commercial and residential construction in addition to agricultural structures and enrollment began to grow. By 2004, the major had attracted 195 students and then doubled that number two years later. Students, alumni, and the program's construction industry advisory board urged the development of a tagged B.Sc. in Construction Management that would bring the curriculum into compliance with ACCE standards and provide a more accurate identity for the program.

In December 2009, the Ohio Board of Regents approved the proposed changes to the CSM major, thereby forming a tagged undergraduate degree program: the Bachelor of Science in Construction Systems Management (B.Sc. in CSM). In March 2010, the first three students graduated with the new tagged degree. They had been informed well in advance what extra courses they would need to qualify for the degree when it was finally approved, so they had enrolled in those courses as electives. In October 2010, there were 337 students in the CSM program offered within the FABE department; about half have chosen to switch from the CSM major to the B.Sc. in the CSM program. New students, as of January 2010, were automatically enrolled in the B.Sc. in CSM program. As of February, 2014 the CSM program had 318 enrolled students.

The FABE Department has many decades of experience teaching technology concepts to engineering and non-engineering students. Moreover, it has the expertise, laboratory space, and specialized equipment for teaching basic construction and fabrication concepts and techniques. In addition, FABE cooperates with two units: the Fisher College of Business and the Department of Agricultural, Environmental, and Development Economics. Both of these units offer strong business management courses at the undergraduate level which significantly complement the CSM program.

The FABE department mission is "To advance the science and application of engineering in systems involving food, agriculture, environment and construction." The mission of the CSM program parallels the FABE department mission and is "To advance the science and technology applied to construction for improving the lives of the people."

The Construction Systems Management major contributes to this mission by establishing the goals for their graduates. They are to:

1. Plan and manage the construction of buildings and other infrastructure, and associated systems that meet all functional, safety, environmental, legal and economic requirements.
2. Follow the business principles and ethical practices necessary to build and maintain a viable company serving the construction industry.
3. Function effectively both as a team member and leader interacting successfully with clients, owners, government officials, the general public, and construction industry professionals from diverse ethnic and cultural backgrounds.
4. Become an accomplished professional in the construction industry who continuously updates technical and management skills and serves relevant industry associations and organizations.
5. Contribute technical and management skills to improving local communities through active participation in community activities, organizations and charities.

The CSM instruction is provided by 10 full time and 4 part time faculty/instructors. There are an additional 2 faculty members that provide administrative functions. Please refer to Fig. 19 on page 21 for a list of current faculty and instructors.

2. List near and long-term objectives in relation to how it is intended that program goals will be achieved and how progress or achievement will be measured. (The objectives below relate to the 5 Mission items above.)

The Construction Systems Management, Bachelor of Science in Construction Systems Management, program in the Department of Food, Agricultural and Biological Engineering assesses its achievement of identified program learning goals on a systematic basis via embedded course assignments, exams, exercises, and activities which serve as authentic assessment methods. This structured approach of appraising the goal-directed education of the students, as elaborated in the program assessment plan, provides the procedure by which evidence reflecting program-level student learning is gathered. The assessment plan findings based on identified learning goals and contributing outcomes will be used in concurrence with the program curricular map to form the underpinning for consideration in academic decisions and to further enhance student learning in the program.

The Construction Systems Management program accomplishes its mission and contributes to the FABE department mission by defining the following learning goals for students who will:

1. Have the necessary knowledge and understanding for planning and managing construction projects;
2. Become familiar with and understand the business principles and ethical practices necessary in the construction and related industries; and
3. Know and exhibit the professional, interpersonal, and communication expertise essential for employment and advancement in the construction industry.

For each learning goal, the contributing outcomes that are more detailed, specific, and easier to measure are defined, which will lead to achievement of the broader goal. The learning outcomes defined for each learning goal are listed below:

- 1.1. Develop a management plan for the construction of buildings and other infrastructure, which includes all associated systems
- 1.2. Assess the functional, safety, environmental, legal and economic requirements for a construction project
- 1.3. Demonstrate knowledge and understanding of construction industry principles and practices and apply them in industry-related employment
- 2.1. Apply knowledge of business and ethical practices to aspects of construction business components

- 2.2. Employ professional and ethical practices
- 2.3. Describe a business plan to build and maintain a viable company serving the construction industry
- 3.1. Demonstrate the ability to function within multi-disciplinary teams
- 3.2. Communicate effectively in both written and oral contexts
- 3.3. Actively engage in continuous professional development
- 3.4. Contribute technical and management skills to improve local communities and actively participate in community activities, organizations and charities
- 3.5. Identify the benefits of actively engaging and serving relevant industry associations and organizations

For each learning outcome we identified specific course work to measure the student learning of the concept defined in the learning outcome. For each measure, indicated standards evaluate the quality of student learning for each goal and associated outcome. We established both the minimum criteria required to assure that learning outcome was achieved, and a set of criteria of excellence the program is striving toward. The FABE Academic Affairs Committee and course instructors review the program, its supporting coursework, and the related assessment outcomes annually, to formulate recommendations for incremental programmatic improvement. With the goal of improving learning, instruction, and curriculum, indicators from a summary report of the outcomes will be used to plan the incorporation of needed modifications. This evaluation process is established within the Ohio State University system. Accumulated findings for all program goals based on the contributing outcomes will be used as the cornerstone in the programmatic review cycle within the university (every sixth year). Providing essential information for making strategic adjustments to the CSM program, will assure continuous quality improvement.

II. ORGANIZATION AND ADMINISTRATION

A. Organizational Charts

- 1. Provide organizational charts for the institution, which describe the place of the construction unit within the institution's administrative structure.**

The CSM program at OSU is located in the FABE Department, administered by the College of Food, Agricultural, and Environmental Sciences (CFAES). The department also has academic member status in the College of Engineering. The CSM program is academically administered through CFAES.

- 2. Indicate the names of incumbents in positions directly related to the construction unit.**

All academic programs (undergraduate and graduate) in the College of Food, Agricultural, and Environmental Sciences are administered by the Associate Dean and Director of Academic Programs in CFAES, Dr. Linda Martin, who reports to the Dean and Vice President of Agricultural Administration, Dr. Bruce McPheron, in turn reports directly to the Acting University President, Dr. Joseph Alutto. In his role as dean of CFAES, Dr. McPheron also reports to Executive Vice President and Provost Joseph Steinmetz. **Appendix C, Page 123** presents an organizational chart of OSU's academic units under the Provost's Office of Academic Affairs. The Organizational Chart for the University can be found online at <http://oaa.osu.edu/assets/files/documents/OAA%20Internal%20Chart.pdf>

B. Construction Unit Administration

1. Administrator of the construction unit:

Name of incumbent: Dr. Scott Shearer, Chair

Title: Chair of the Department of Food, Agricultural, and Biological Engineering

Describe the administrative procedures of the construction unit and, if pertinent, the next higher administrative unit with regard to:

a. Curriculum: Development of curriculum objectives; development, implementation and revision of the curriculum; selection of courses to be offered.

The department's undergraduate programs are overseen by the Academic Affairs Committee, chaired by Dr. Gonul Kaletunc. Each individual undergraduate program has a program coordinator. CSM's program co-coordinators are Dr. Qian Chen and W. Mac Ware

The curricular objectives were initially developed through a series of departmental strategic planning meetings in 2003 facilitated by Mr. Jim Hess, Vice President of Messer Construction Co., chair of the Industry Advisory Council at that time. These have since been refined and modified in response to assessment input from faculty, students, alumni, and the industry advisory council.

Curriculum development is overseen by the department's committee on Academic Affairs. Any curriculum changes must be approved by the departmental, college, and university level committees on academic affairs, and by the University Senate, OSU Board of Trustees, and finally, the Ohio Board of Regents. The revision, establishing the BS in CSM, was approved by the Ohio Board of Regents in December 2009. The most recent revision was in June 2012 when OSU converted from quarters to semesters.

All required courses in the CSM curriculum are offered both semesters of the academic year. An electronic mail survey of current CSM students is conducted early each spring to determine which courses students would like to enroll in during the summer semester. Summer courses offered are based on student demand. Our CSM Internship course is offered each summer since many of our students perform their respective internships during that time.

b. Faculty: Recruitment and hiring; assignment of teaching loads.

Specific teaching, research, and service assignments of responsibility for individual faculty and staff members are made by the departmental chair, based on recommendations from the Chair of Academic Affairs and the CSM program coordinator, and through negotiations with individual faculty members. The assignment of specific responsibilities is made in accordance with the department's mission and its program of activities for a particular year. A regular tenure-track faculty member with a 50 percent time allocation to resident classroom instruction is expected to teach 3 courses each (3 credits or higher) annually. However, course responsibility is adjusted on the basis of the course level, number of credits, courses with a laboratory, institutional and research commitments, number of graduate students, commitments to student advising, travel, and various other factors.

Recruitment and hiring of additional faculty and instructors is based on availability of funding from the college and anticipated income from student enrollment

c. Facilities: Assignment of rooms; class size limits; management of assigned space.

The department is the sole academic unit housed in the Agricultural Engineering Building and has scheduling authority for two of the classrooms, rooms 142 and 148. Three other

classrooms (100, 103, and 104) are part of the university's classroom pool, and are scheduled centrally by the University Registrar's office. Usually our CSM program gets preferential assignment of rooms in our building, and most semesters our classroom space is completely filled with departmental courses.

The five classrooms have capacities which range from 30 (Room 142) to 100 (Room 100) and class size limits are based on classroom capacities. Lab sections are limited to 20 persons each to allow the most hands-on opportunities for students. Writing-intensive classes are limited to 24 persons per class (i.e., CSM 2305: Professional Development I).

Assigned space is managed centrally, but coordinated by a locally designated building coordinator. Dr. Michael Lichtensteiger currently fills that role.

d. Budget: Allocation of funds; determination of salaries; control of expenditures.

The Department of Food, Agriculture and Biological Engineering (FABE) receives annual budget allocation from the College of Food, Agricultural and Environment Sciences (CFAES) via three distinct budget lines: the Ohio Agricultural Research and Development Center (OARDC), the Ohio State University Extension (OSUE), and General Funds (classroom teaching). Faculty and staff salaries and benefits are supported from all three line items. General Funds supports faculty and staff salaries, supplies, services and equipment for all three of the department's undergraduate programs: Construction Systems Management (CSM), Food, Agricultural and Biological Engineering (FABE) and the Agricultural Systems Management (ASM).

Annually, the CFAES adjusts the departmental base budgets in response to University Central Administrative guidelines and requests for support from the Chair of FABE. Limited funding from General Funds and endowed funds support graduate teaching assistants and undergraduate student graders on an as-needed basis. Additional support for teaching efforts may come from sponsored grants, contracts or endowments. This includes the Agricultural Engineering Equipment Endowment Fund which supports equipment purchases, updates and enhancements with priority for instructional equipment.

The Department annually participates in the OARDC equipment allocation request. Although equipment requested through OARDC is primarily for research, it may be used in teaching activities as well. Occasional upgrades in classroom equipment may be made available from a pooled resource provided by either the College of Food, Agricultural and Environmental Sciences (CFAES) or the Department of FABE. The College of Engineering allocates funds on an annual basis to support the student academic computer labs, one of which is located in the Agricultural Engineering Building. Funding also covers the cost of software licensing, technical support staffing, and local area network upgrades. The source of this budget is through collection of the Technology Learning Fee assessed to students in all three of the department's undergraduate majors. In addition, three of the classrooms located in the Agricultural Engineering Building are supported through the University Registrar's Office as part of the classroom pool.

e. Evaluation: Evaluation of program effectiveness.

The BS in CSM program is evaluated on a regular basis using a variety of methods and feedback mechanisms including, but not limited to:

- Collecting and analyzing feedback from a required, web-based survey that all graduating seniors are required to complete.

- Reviewing supervisor evaluations from student internship experiences. All the evaluation forms are attached in **Appendix K (see Pages 143-146)**.
 - Soliciting feedback from members of the CSM Advisory Board (most of whom hire graduates and interns from the program).
 - Monitoring student achievement in the capstone course (CONSYSMT 4900).
- 2. Describe the administrative procedure of the construction unit with regard to how the administration and faculty periodically review operations and curriculum offerings for improvement opportunities through sound experimentation and innovation.**

Appropriate summaries of program evaluation feedback are presented to the faculty annually and construction industry advisory committee each semester for analysis and planning purposes. These results are also shared with the department chair during annual performance and planning reviews. Instructors engage in continuous quality improvement of their courses with every offering. Larger curriculum changes are triggered internally (e.g., in response to evaluation feedback data) and externally (e.g., in response to changes in the industry or university). Following these reviews, the Academic Affairs committee holds a series of meetings to address the required changes and they draft a proposal. The proposal must then be approved following standard university procedures: departmental, college, and university level committees on academic affairs; the University Senate; OSU Board of Trustees; and ultimately the Ohio Board of Regents.

C. Related Programs

- 1. Describe intra-campus and multi-campus relationships with allied disciplines.**

The Department of Civil, Environmental and Geodetic Engineering (CEGE) within the College of Engineering has a construction engineering specialization in its Civil Engineering program. The construction courses in their program are intended for engineering students who have a much more extensive analytical, mathematical, and engineering science background than do the CSM students. Faculty members in CEGE's construction engineering program have expressed both support for the BS in CSM program and interest in greater collaborations between the departments, including shared seminars, co-listed courses, and co-curricular teams.

The 2+2 articulation plan was for students to complete an Associate of Science degree in Construction, and then transfer to the OSU Columbus campus to complete their BS degree in CSM. During the semester conversion, multiple meetings were held with OSU's Agricultural Technical Institute (ATI) administrators and instructors and a 2+2 articulation agreement was created between ATI and OSU. For the Columbus State Community College (CSCC), the articulation agreement was still a work in progress during the early semesters. Transfer of students from CSCC is handled on a case-by-case basis.

We have a dual degree program with OSU's Knowlton School of Architecture. Their program emphasizes the theoretical design elements of their field, and there has been an increased demand for architecture graduates with additional practical skills in construction management. Annually three to five students enroll in this dual degree program.

- 2. Describe provisions that have been established for interfacing with related programs and for the interaction of the faculty with those in other disciplines.**

Our industry advisory council invites faculty representatives from CSCC and OSU's ATI's construction programs.

Civil construction faculty from CEGE and our CSM faculty serve on each other's graduate advisory committees when requested. One CSM faculty member currently has a courtesy appointment with CEGE, which facilitates collaborative research between CEGE and the construction unit in FABE.

D. Construction Unit Budget

1. **Indicate the approximate amount and percentage of the sources of recurring operating revenue for the construction unit for the prior fiscal year.**

Fig. 1 Construction Unit Operating Revenue for the Prior Fiscal Year

Source	Amount (\$)	%
Institutional funds (cash)	\$33,000	5
Salaries (annual rate)	\$643,537.24	95
Total Operating Revenue	\$676,537.24	100

2. **Indicate the approximate amount and percentage of the expenditures for the construction unit for the prior fiscal year.**

Fig. 2: Construction Unit Expenditures for the Prior Fiscal Year

Type of Expenditure	Amount (\$)	%
Faculty Salaries	\$106,587.60	15.7
Other salaries and wages	\$536,949.64	79.4
Expenses	\$33,000.00	4.9
Total Expenditures	\$676,537.24	100

3. **Describe the nature of, the approximate amount, and the use of nonrecurring funds for the preceding year.**

Not applicable

4. **Indicate how the budget is sufficient to enable the program to realize its mission and goals.**

Budget covers teaching staff salaries, equipment, and consumables to teach CSM courses annually. As the program grows, more funding is allocated through the College of FAES.

E. Comparable Program Budgets

Fig. 3: Comparable Unit Operating Revenue for the Prior Fiscal Year (Include chart for all comparable units.)

Source	Amount (\$)	%
Institutional Funds	\$ 2.678 M	100
Other salaries and wages	--	--
Total Operating Revenue: Department of Civil, Environmental and Geodetic Engineering	\$ 2.678 M	100

In comparison, the annual total operating budget for the Department of Food Agricultural and Biological Engineering is \$3.889 million (FY 2013), of which the CSM program is one part. At OSU, the program that has the most in common with the construction management program is Civil Engineering's construction engineering program. Like FABE's CSM program, construction engineering is housed in a department that offers more than one undergraduate degree; the Department of Civil, Environmental and Geodetic

Engineering (CEGE) offers two undergraduate degrees: BS in Civil Engineering and BS in Environmental Engineering. Within the BS in Civil Engineering, students may choose to specialize in construction engineering, environmental engineering, geodetic engineering, geotechnical engineering, hydraulic engineering, structural engineering, or transportation engineering. This program is housed in the College of Engineering. The total 2013-2014 annual budget (FY 2014) for the Ohio State University is \$5.52 billion. (<http://www.osu.edu/osutoday/stuinfo.php#budget>)

III. CURRICULUM

A. Program Description

1. Construction program title: Construction System Management
2. Degree title: BS in Construction System Management
3. Credit hours required for degree: 130 semester hours
4. Program options: none (program includes commercial, residential, and heavy construction)
5. Other degree programs administered by the FABE department:
 - BS in Agriculture with a major in Agricultural Systems Management
 - BS in Food, Agricultural, and Biological Engineering
 - MS in Food, Agricultural, and Biological Engineering
 - PhD in Food, Agricultural, and Biological Engineering

B. Institutional Requirements

1. State Level

The Ohio Board of Regents is required to review and approve all new baccalaureate degrees for Ohio's public campuses. Reviews focus on demonstrated need for new programs, their coherence and the capacity of campuses to provide fiscal, capital and human resources. Consistency with other degrees of a similar type and level is also considered in the review (from http://regents.ohio.gov/academic_programs/4yr/index.php). The BS in CSM was reviewed and approved by the Ohio Board of Regents in December 2009.

2. Institutional level

The Ohio State University requires a minimum of 130 credit hours under the semester system for an undergraduate degree. Most programs with professional accreditation require more credit hours than the minimum. The university strives to strike a balance between the discipline-specific knowledge required in a major, the body of knowledge that all undergraduate students should be expected to master prior to graduation (the General Education Curriculum—or GEC), and a range of additional enrichment opportunities that extend beyond the classroom.

All undergraduate students must complete the General Education Curriculum in addition to their major program. This includes learning goals and objectives related to students' abilities to understand and appreciate diverse cultures, master multiple modes of inquiry, analyze and communicate information, and demonstrate a breadth of knowledge across the natural and social sciences, humanities, and arts.

The major embodies a student's central field of learning and often leads directly to a career or further academic preparation (graduate or professional school) for that career. At Ohio State the major constitutes, at minimum, 40 credit hours, (the CSM major requires 55). However, there is substantial structural diversity among the university's 175+ majors. Some majors, enrolling approximately half of the student body (the biological sciences, engineering, foreign language, and music) are highly structured, with the combined requirements in the major itself and the prerequisite work necessary to prepare to enter the major

encompassing a large portion of the hours for graduation. The remaining half of the undergraduate student body, on the other hand, is enrolled in majors (history, psychology, business, human development) with more modest credit hour requirements for the major. These fields thus allow students more electives in their curricula. (Modified from the 2007 Self-study report, <http://oaa.osu.edu/assets/files/documents/OhioStateSelfStudyReport.pdf>)

3. College level

The College of Food, Agricultural, and Environmental Sciences requires that all undergraduate majors in the college have an internship experience. Other requirements, such as the college's version of the General Education Curriculum, are only applicable to majors under the BS in Agriculture. The BS in CSM, as a stand-alone, tagged degree, is not required to adhere to those requirements, but was evaluated and approved with its own individual set of degree requirements.

C. Plan of Study

1. The most recent curriculum at Summer 2013: A copy is in the **Appendix D Page 125** and it can be found at:
<http://fabe.osu.edu/sites/fabe/files/imce/files/CurrSheets/Construction%20Systems%20Management%20New%20Logo%20July%202013.pdf>.
2. List of course requirements and sequence by semester: A copy of our course requirements by semester is in the **Appendix E Page 127** and it can be found at:
<http://fabe.osu.edu/sites/fabe/files/imce/files/CurrSheets/CSM%20Curriculum%206-2013.pdf>.
3. The recently proposed curriculum change at Spring 2014 (approved by faculty on March 7, 2014): A copy is in the **Appendix F, Page 129**. Major changes in this version are:
 - a. CSM 4642 Construction Control - Contracts and Document was increased from two to three credit hours. CSM 4605 Professional Development II was decreased from two to one credit hour. These changes will strengthen the contents taught under the Construction and Construction Science Categories.
 - b. CSM 3191 Internship in Construction Systems Management was included under the construction curriculum.
 - c. A new list of technical electives was proposed and listed separately from business electives. This will ensure that students will take at least 18 credit hours business management courses to meet ACCE requirements. Also, the selected technical electives can enhance the subject matters and credit hours taught under the Construction and Construction Science Categories.

D. Degree Requirements – Four Year Baccalaureate Program

List the courses and credit hours required for the degree. Group according to the specified divisions and subdivisions as defined in ACCE Document 103, Standards and Criteria for Accreditation of Postsecondary Construction Education Degree Programs. Courses are to be classified according to the content rather than the academic unit offering the course. If appropriate, credit hours for a course may be divided between two divisions. Electives whose options span more than one division are to be listed under "Other Requirements."

Fig. 5: General Education - 24 semester hrs.

Course No.	Course Title or Elective Requirements	Cr. Hrs.
<i>Choose one from:</i> Agr Comm 3130 Comm 2110	Oral Expression in Agriculture Speech	3
English 1110	First Year English Composition	3
XXX 2367*	Writing Level II	3
<i>Choose one from:</i> Rur Soc 1500 Soc 1101	<i>Social Science I</i> Introduction to Rural Sociology Introductory Sociology	3
<i>Choose one from:</i> AED Econ 2001 Econ 2001	<i>Social Science II[#]</i> Principles of Food and Resource Economics Principles of Microeconomics	3
	<i>Historical Study*</i>	3
	<i>Culture & Ideas or Historical Study II*</i>	3
	<i>Art*</i>	3
	<i>Literature*</i>	3
	<i>Subtotal</i>	24

*Select from the approved CFAES GE List. Please refer to **Appendix G, Page 131** of this document.

[#]Credit hours are counted under the Division of Business and Management.

Construction Systems Management courses that integrate Communication and Ethics (5.78 cr. hrs):

<i>Course No. and Title</i>		<i>Cr. Hrs. (Comm)</i>	<i>Cr. Hrs. (Ethics)</i>
CONSYSMT 1205	Introduction to Constr. Systems Management	0.2	0.1
CONSYSMT 2305	Professional Development I	1.8	0.04
CONSYSMT 2345	Mechanical Systems for Buildings	0.2	0.1
CONSYSMT 2440	Construction Surveying & Site Development	0.07	0.03
CONSYSMT 2600	Construction Safety and Health	0.3	
CONSYSMT 3450	Estimating for Construction	0.25	
CONSYSMT 3451	Scheduling Construction Projects	0.1	0.1
CONSYSMT 4605	Professional Development II	1.8	0.2
CONSYSMT 4641	Construction Project Management		0.07
CONSYSMT 4642	Construction Control - Contracts and Documents		0.07
CONSYSMT 4660	Heavy Construction Management		0.15
CONSYSMT 4900	Construction Management Capstone	0.1	0.1
<i>Subtotal:</i>		<i>4.82</i>	<i>0.96</i>

Fig. 6: Mathematics and Science - 16 semester hrs.

Course No.	Course Title or Elective Requirements	Cr. Hrs.
Physics 1200	Mechanics, Kinematics, Fluids, Waves	5
Earth Science 1121	The Dynamic Earth	4
ENR 3000 & 3001	Soil Science	4
<i>Choose one from:</i>	<i>Data Analysis--Statistics</i>	3
STAT 1450	Introduction to the Practice of Statistics	
COMLDR 3537	Data Analysis in the Applied Sciences	
AEDECON 2005	Data Analysis for Agribusiness and Applied Economics	
ANIMSCI 2260	Data Analysis and Interpretation for Decision Making	
HCS 2260	Data Analysis and Interpretation for Decision Making	
ENR 2000	Natural Resources Data Analysis	
	<i>Subtotal</i>	<i>16</i>

Construction Systems Management courses that integrate Math and Science (0.79 cr. hrs):

<i>Course No. and Title</i>	<i>Cr. Hrs. (Math)</i>	<i>Cr. Hrs. (Science)</i>
CONSYSMT 2345 Mechanical Systems for Buildings	0.2	0.11
CONSYSMT 2440 Construction Surveying & Site Development	0.3	
CONSYSMT 3545 Structures for Construction Managers I	0.14	0.04
<i>Subtotal</i>	<i>0.64</i>	<i>0.15</i>

Fig. 7: Business and Management – 18~21 semester hrs.

<i>Course No.</i>	<i>Course Title or Elective Requirements</i>	<i>Cr. Hrs.</i>
<i>Choose one from:</i>		
Econ 2001	Principles of Microeconomics	3
AEDECON 2001	Principles of Food and Resource Economics	3
<i>Choose one from:</i>		
AEDECON 3101	Principles of Agribusiness Management	3
BUS-MHR 3100	Foundations of Management and Human Resources	3
<i>Choose one from:</i>		
AEDECON 2105	Managerial Records and Analysis	3
ACCT&MIS 2200	Introduction to Accounting I	3
ACCT&MIS 2000	Foundations of Accounting	3
<i>Choose one from:</i>		
AEDECON 3103	Principles of Agribusiness Finance	3
BUS-FIN 3120	Foundations of Finance	3
<i>Choose one from:</i>		
AEDECON 3170	Agricultural Law	3
BUS-FIN 3500	Legal Environment of Business	1.5
ENR 7520	Environmental Science and Law	3
<i>Choose one from:</i>		
AEDECON 3160	Human Resource Management in Small Businesses	2
BUS-MHR 3300	Managing Human Resources	3
COMLDR 3530	Foundations of Personal and Professional Leadership	3
COMLDR 4430	Leadership in Teams and Community Org	3
	<i>Subtotal</i>	<i>18</i>

Business Electives: choose one (If students want to take more than one, they may count toward free elective hours):

<i>Course No. and Title</i>	<i>Cr. Hrs.</i>
ACCT&MIS 2300 Introduction to Accounting II	3
AEDECON 3102 Principles of Agribusiness Marketing	3
AEDECON 3121 Salesmanship in Agriculture	2
BUS-FIN 3290 Entrepreneurial Finance	3
BUS-FIN 3400 Introduction to Real Estate	3
BUS-FIN 4412 Real Estate Law	3
BUS-M&L 3150 Foundations of Marketing	3
BUS-M&L 3241 Introduction to Entrepreneurial Marketing	3
BUS-MGT 3130 Foundations of Operations Management	3
BUS-MHR 2000 Introduction to International Business	1.5
BUS-MHR 3510.01 New Venture Creation	3
BUS-MHR 3520 Leading High-Performance Ventures	3

Fig. 8: Construction Science – 26.8 semester hrs.

Course No.	Course Title or Elective Requirements	Cr. Hrs.
EN GRAPH 1121	Graphic Presentation I	2
CONSYSMT 1205	Introduction to Construction Systems Management	0.9
CONSYSMT 2240	Construction Materials & Methods I	2.66
CONSYSMT 2241	Construction Materials & Methods II	2.5
CONSYSMT 2310	Electrical and Lighting Systems for Buildings	2.6
CONSYSMT 2345	Mechanical Systems for Buildings	2
CONSYSMT 2440	Construction Surveying & Site Development	3.27
CONSYSMT 3450	Estimating for Construction	2.36
CONSYSMT 3451	Scheduling Construction Projects	1.1
CONSYSMT 3545	Structures for Construction Managers I	2.5
CONSYSMT 3546	Structures for Construction Managers II	2.85
CONSYSMT 4642	Construction Control - Contracts and Documents	0.35
CONSYSMT 4660	Heavy Construction Management	0.5
CONSYSMT 4900	Construction Management Capstone	1.2
<i>Subtotal</i>		26.8

Fig. 9: Construction – 23.7 semester hrs.

Course No.	Course Title or Elective Requirements	Cr. Hrs.
CS&E 1112	Computer-Assisted Problem Solving for Constr. Management	3
CONSYSMT 1205	Introduction to Construction Systems Management	1.8
CONSYSMT 2240	Construction Materials & Methods I	0.4
CONSYSMT 2241	Construction Materials & Methods II	0.5
CONSYSMT 2305	Professional Development I	0.2
CONSYSMT 2310	Electrical and Lighting Systems for Buildings	0.4
CONSYSMT 2345	Mechanical Systems for Buildings	0.4
CONSYSMT 2440	Construction Surveying & Site Development	0.3
CONSYSMT 2600	Construction Safety and Health	2.7
CONSYSMT 3450	Estimating for Construction	1.4
CONSYSMT 3451	Scheduling Construction Projects	2.8
CONSYSMT 3191	Internship	2.0
CONSYSMT 3545	Structures for Construction Managers I	0.3
CONSYSMT 3546	Structures for Construction Managers II	0.15
CONSYSMT 4641	Construction Project Management	1.9
CONSYSMT 4642	Construction Control - Contracts and Documents	1.6
CONSYSMT 4660	Heavy Construction Management	2.4
CONSYSMT 4900	Construction Management Capstone	1.6
<i>Subtotal</i>		23.7

Total Construction Science and Construction hours:

50.5 cr. hrs.

Other requirement:

Senior Program Review

0 cr. hr.

Fig. 10: Other Requirements - 12-15 semester hrs.

Course No.	Course Title or Elective Requirements	Cr. Hrs.
FAES 1100/CSM 1100	University Survey	1
Math 1148	College Algebra	4
Entomology 1111	Biology of Organisms Affecting Buildings	4
Free electives		3-6

Recommended technical electives from the FABE department:

<i>Course No. and Title</i>	<i>Cr. Hrs.</i>
CONSYSMT 5670 Green Building and Sustainable Construction	3
CONSYSMT 5680 Construction Renovation and Demolition	3
AGSYSMGT 3232 Engines and Power transmission	3
xxx 3597 Study Abroad	3
xxx 5597 Study Abroad	3

Total Credit Hours: 130

E. Required Curriculum Categories, Core Subject Matter, and Curriculum Topical Content

Provide evidence of inclusion of the required curriculum categories, core subject matter, and curriculum topical content using the following matrix.

See **Appendix I, Pages 137-139**.

F. Degree Requirements - Two Year Associate Degree Program

Not applicable

G. Required Curriculum Categories, Core Subject Matter, Curriculum Topical Content

Not applicable

H. Course Sequencing

List the courses with their prerequisites or corequisites or provide a precedence diagram showing the prerequisite and corequisite interdependency of the courses. Courses without prerequisites need not be shown.

See **Appendix J, Page 141** for a sample course sequence and prerequisites.

I. Course Descriptions

- 1. Provide in the self-evaluation study a catalog description for all required courses, including those courses taught within the construction unit.**

The following course descriptions appear in the *Course Offerings Bulletin* of The Ohio State University (http://registrar.osu.edu/scheduling/SchedulingContent/2013_2014_course_bulletin.pdf). The semester of offering, class and lab meeting schedule, and pre-requisites are noted for each course after its description.

CONSYSM 1100 - Exploring Construction Systems Management (Survey Class)

Basic understanding of the global trends within construction systems management, the diversity of career opportunities within the industry, planning for a career and opportunities for professional development

CONSYSM 1205 - Introduction to Construction Systems Management

Overview of residential, commercial, industrial, institutional and transportation sectors of the construction industry and the role of the construction manager. Introduction to planning, scheduling, estimating, safety and ethics in construction.

Prereq or concur: Math 1148 (148), 1149, 1150 (150), or 1151.01 (151). Not open to students with credit for ConSysMt 205. This course is available for EM credit.

CONSYSM 2193 - Individual Studies

Introductory individual study of problems and topics not included in regular Construction Systems Management courses.

Prereq: CPHR 2.5 or above, and permission of instructor. Repeatable to a maximum of 6 cr hrs or 6 completions. This course is graded S/U.

CONSYSM 2194 - Group Studies

Introductory group studies of selected topics in Construction Systems Management

Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs or 4 completions.

CONSYSM 2240 - Construction Materials and Methods I

A study of the principles and practices in basic metal fabrication using the current joining, metallurgical and welding processes required in the construction industry.

Prereq: ConSysM 1100 and FAES 1100 (100), or equivalent university survey course. Not open to students with credit for 240 or AgSysMt 2240 (AgSysMgt 240). This course is available for EM credit.

CONSYSM 2241 - Construction Materials and Methods II

Material selection and construction methods for residential and commercial construction with an emphasis on wood, masonry, and concrete.

Prereq or concur: ConSysM 1205 (ConSysMt 205). Not open to students with credit for ConSysMt 241 or AgSysMgt 241. This course is available for EM credit.

CONSYSM 2305 - Professional Development I

Business communications and professional development in construction systems management including informative and persuasive writing, academic planning, project management, research techniques, teaming, report writing and presentations.

Prereq: English 1110 (110). Not open to students with credit for ConSysMt 305 or AgSysMt 2305 (AgSysMgt 305). This course is available for EM credit.

CONSYSM 2310 - Electrical and Lighting Systems for Buildings

Concepts of electricity and illumination applied to the design and installation of electrical and lighting systems in buildings including safety, code requirements, installation methods, electrical schematics, and construction blueprints.

Prereq: Physics 1200 (111) or 1250 (131). Not open to students with credit for ConSysMt 310. This course is available for EM credit.

CONSYSM 2345 - Mechanical Systems for Buildings

Fundamentals of HVAC, plumbing, fire protection and noise and vibration control and their impact on building design and construction.

Prereq: Physics 1200 (111) or 1250 (131). Not open to students with credit for ConSysMt 345. This course is available for EM credit.

CONSYSM 2440 - Construction Surveying and Site Development

Principles of soil mechanics, erosion control, layout, and surveying as applied to site development for residential and commercial construction.

Prereq: CSE 1112 (105) or HCS 2401, and EnGraph 1121 (121) or Engr 1181.01 (181). Concur: ConSysM 2241 (ConSysMt 241) and ENR 3000 (300.01). Not open to students with credit for ConSysMt 440. This course is available for EM credit.

CONSYSM 2600 - Construction Safety and Health

Construction safety and health practices, strategies and methods for the development and management of safety and health programs in the construction industry.

Prereq: ConSysM 1205 (ConSysMt 205). Not open to students with credit for ConSysMt 600. This course is available for EM credit.

CONSYSM 3191 - Internship in Construction Systems Management

A pre-approved internship of planned and supervised work experiences which provide professional and technical growth in the construction industry.

Prereq: ConSysM 2305 (ConSysMt 305), and 8 sem cr hrs in ConSysM or 11 qtr cr hrs in ConSysMt courses, or some combination thereof. Not open to students with credit for ConSysMt 489 or AgSysMt 3191 (AgSysMgt 489).

CONSYSM 3450 - Estimating for Construction

Reading and interpretation of construction drawings and specifications for construction projects. Estimating the material requirements and costs of building construction projects using commercially available estimating tools.

Prereq: ConSysM 2240 (ConSysMt 240), 2241 (241), 2310 (310), 2345 (345), 2440 (440), EnGraph 1121 (121), and CSE 1112 (105). Not open to students with credit for ConSysMt 540.

CONSYSM 3451 - Scheduling Construction Projects

Planning, scheduling and tracking of construction project elements including management of time, resources, cost and safety.

Prereq: ConSysM 3450 (ConSysMt 540). Not open to students with credit for ConSysM 541.

CONSYSM 3545 - Structures for Construction Mgrs I

Principles of statics, material properties, structural analysis and design useful in understanding the design and managing the construction of steel and wood structures.

Prereq: ConSysM 2240 (ConSysMt 240) and 2241 (241), and Physics 1200 (111) or 1250 (131). Not open to students with credit for ConSysMt 545.

CONSYSM 3546 - Structures for Construction Mgrs II

Principles of statics, material properties, structural analysis and design useful in understanding the design and managing the construction of steel and wood structures.

Prereq: ConSysM 2240 (ConSysMt 240) and 2241 (241), and Physics 1200 (111) or 1250 (131). Not open to students with credit for ConSysMt 545.

CONSYSM 4170 - Senior Program Review

An interactive assessment of graduating seniors' overall achievements in Construction Systems Management and their assessment of the program.

Prereq: Enrolled in final semester of classes. This course is graded S/U.

CONSYSM 4193 - Individual Studies

Intermediate individual study of problems and topics not included in regular Construction Systems Management courses.

Prereq: GPA 2.5 or above, and permission of instructor. Repeatable to a maximum of 6 cr hrs or 6 completions. This course is graded S/U.

CONSYSM 4194 - Group Studies

Intermediate group studies of selected topics in Construction Systems Management.

Prereq: Permission of instructor. Repeatable to a maximum of 10 cr hrs or 4 completions.

CONSYSM 4605 - Professional Development II

Development and pursuing career plans; strategies and programs for employment in the construction industry, professional development, personal growth, and relationships.

Prereq: ConSysM 2305 (ConSysMt 305), and AgrComm 3130 (390) or Comm 2110 (321), and any second writing course numbered 2367 (367). Not open to students with credit for ConSysMt 605 or AgSysMt 4605 (AgSysMgt 605). This course is available for EM credit.

CONSYSM 4641 - Construction Project Management

The management of standard commercial/residential construction projects, including planning, scheduling, materials management, resource procurement, codes and standards, construction funding, personnel management and labor unions.

Prereq: ConSysM 3451 (ConSysMt 541). Not open to students with credit for ConSysMt 641.

CONSYSM 4642 - Construction Control - Contracts and Documents

Documents used in the construction industry will be discussed and applied; including types of contracts, bidding and negotiating, administration and quality control of construction contracts.

Prereq: ConSysM 3451 (ConSysMt 541). Not open to students with credit for ConSysMt 642.

CONSYSM 4660 - Heavy Construction Management

Methods, materials, equipment, and planning of heavy construction projects. Economics of equipment acquisition and operation. Equipment selection, performance characteristics, and production rates.

Prereq: ConSysM 3451 (ConSysMt 541). Not open to students with credit for ConSysMt 660.

CONSYSM 4900 - Construction Management Capstone

Skills in estimating, scheduling, blueprint reading, teamwork, oral written communication, management principles, and contracts/documents used to develop solutions to industry provided construction related problems.

Prereq: ConSysM 3546 (ConSysMt 546), 4641 (641), and 4642 (642), or permission of instructor. Not open to students with credit for ConSysMt 643.

CONSYSM 4998 - Undergraduate Research

Supervised undergraduate research on various topics.

Prereq: CPHR 2.5 or above, and permission of the instructor. Repeatable to a maximum of 6 cr hrs or 4 completions. This course is graded S/U.

CONSYSM 4999 - Research with Distinction

Conducting and reporting research with Distinction. Students are expected to present at the CFAES Undergraduate Research and the Denman University Undergraduate Research forums.

Prereq: GPA 3.0 or above, GPA 3.0 or above in ConSysM, and permission of instructor. Repeatable to a maximum of 6 cr hrs or 3 completions. This course is graded S/U.

CONSYSM 4999H - Honors Research with Distinction

Conducting and reporting honors research with distinction. Students are expected to present at the CFAES Undergraduate Research and the Denman University Undergraduate Research forums.

Prereq: Honors standing, and FAES 4590.01H (590H), and CPHR 3.4 or above, and GPA 3.4 or above in ConSysM, and permission of instructor. Repeatable to a maximum of 6 cr hrs or 3 completions. This course is graded S/U.

CONSYSM 5670 - Green Building and Sustainable Construction

Introduction to LEED rating systems, major components of sustainable building design and construction as well as other environmental and economic issues of sustainable built environments.

Prereq: Jr, Sr, or Grad standing. Not open to students with credit for ConSysMt 670.

CONSYSM 5680 - Construction Renovation and Demolition

The practices, procedures and management strategies employed by construction managers in renovating and demolishing buildings and other structures.

Prereq or concur: ConSysM 4642 (ConSysMt 642), or permission of instructor.

2. **Note and document any discrepancies between existing catalog descriptions and current course listings.**

Documents are current.

3. **Include, in Appendix B, a syllabus for each course taught by the construction unit. The syllabus should state the course objectives in relation to the program goals and objectives, outline instructional methods, and contain a topical outline.**

A copy of the syllabi is included in **Appendix B, Pages 79-116.**

J. Course Offerings

1. **List the required courses taught by the construction unit. Indicate course number, title, number of sections per semester or quarter, and average enrollment per section for the most recent academic year.**

Fig. 16: Required Course Offerings

Required Courses		No. of Sections		Ave. Enroll.
No.	Title	Fall	Spring	
CONSYSMT 1100	Exploring Construction Systems Management	1	0	29
CONSYSMT 1205	Introduction to Constr. Systems Management	1	1	67
CONSYSMT 2240	Construction Materials & Methods I	1	1	36
CONSYSMT 2241	Construction Materials & Methods II	1	1	36
CONSYSMT 2305	Professional Development I	1	1	25
CONSYSMT 2310	Electrical and Lighting Systems for Buildings	1	1	38
CONSYSMT 2345	Mechanical Systems for Buildings	1	1	34
CONSYSMT 2440	Construction Surveying & Site Development	1	1	30
CONSYSMT 2600	Construction Safety and Health	1	1	44
CONSYSMT 3450	Estimating for Construction	1	1	31
CONSYSMT 3451	Scheduling Construction Projects	1	1	32
CONSYSMT 3191	Internship	1	1	30
CONSYSMT 3545	Structures for Construction Managers I	1	1	28
CONSYSMT 3546	Structures for Construction Managers II	1	1	29
CONSYSMT 4605	Professional Development II	1	1	38
CONSYSMT 4641	Construction Project Management	1	1	32
CONSYSMT 4642	Constr. Control - Contracts and Documents	1	1	32
CONSYSMT 4660	Heavy Construction Management	1	1	32
CONSYSMT 4900	Construction Management Capstone	1	1	33

2. **List the elective courses offered by the construction unit during the past two academic years. Indicate course number, title, number of sections per semester or quarter, and average enrollment per section.**

Fig. 17: Elective Course Offerings

Elective Courses		No. of Sections		Ave. Enroll.
No.	Title	Fall	Spring	
CONSYSMT 5670	Green Building and Sustainable Construction	1	1	18
CONSYSMT 5680	Construction Renovation and Demolition	1	1	11

3. Comments, if any.

Most construction management courses are offered both semesters per year; a few may be offered in the summer based on student demand.

K. Supporting Disciplines

1. List the required courses in the construction curriculum taught by other academic units. Indicate other disciplines that utilize the same course. (If widely used, indicate "all campus.")

Fig. 18: Supporting Disciplines

Course No.	Course Title	Other Discipline Using Course
Agr Comm 3130 or Comm 2110	Oral Expression in Agriculture	All campus (mostly CFAES)
English 1110	Speech	All campus
XXX 2367*	First Year English Composition	All campus
Rur Soc 1500 or Soc 1101	Writing Level II	All campus
AED Econ 2001 or Econ 2001	Introduction to Rural Sociology	All campus
	Introductory Sociology	All campus
	Principles of Food and Resource Economics	All campus (mostly AED Econ majors)
	Principles of Microeconomics	All campus
	<i>Historical Study</i>	All campus
	<i>Culture & Ideas or Historical Study II</i>	All campus
	<i>Art</i>	All campus
	<i>Literature</i>	All campus
Physics 1200	Mechanics, Kinematics, Fluids, Waves	All campus
Earth Science 1121	The Dynamic Earth	All campus
ENR 3000 & 3001	Soil Science	All campus
Math 1148	College Algebra	All campus
<i>Choose one from:</i>	<i>Data Analysis--Statistics</i>	
STAT 1450	Introduction to the Practice of Statistics	All campus
COMLDR 3537	Data Analysis in the Applied Sciences	All campus
AEDECON 2005	Data Analysis for Agribusiness and Applied Economics	All campus
ANIMSCI 2260	Data Analysis and Interpretation for Decision Making	All campus
HCS 2260	Data Analysis and Interpretation for Decision Making	All campus
ENR 2000	Natural Resources Data Analysis	All campus
Entomology 1111	Biology of Organisms Affecting Buildings	
CS&E 1112	Computer-Assisted Problem Solving for Constr. Management	
EN GRAPH 1121	Graphic Presentation I	All campus (mostly engineering)
	<i>University Survey</i>	All campus
<i>Choose one from:</i>		
Econ 2001	Principles of Microeconomics	All campus
AEDECON 2001	Principles of Food and Resource Economics	AED Econ major, all campus (minors)
<i>Choose one from:</i>		
AEDECON 3101	Principles of Agribusiness Management	AED Econ major, all campus (minors)
BUS-MHR 3100	Foundations of Management and Human Resources	Business majors, all campus (minors)
<i>Choose one from:</i>		
AEDECON 2105	Managerial Records and Analysis	AED Econ major, all campus

ACCT&MIS 2200	Introduction to Accounting I	(minors) Business majors, all campus
ACCT&MIS 2000	Foundations of Accounting	(minors) Business majors, all campus
<i>Choose one from:</i> AEDECON 3103	Principles of Agribusiness Finance	(minors)
BUS-FIN 3120	Foundations of Finance	AED Econ major, all campus
<i>Choose one from:</i> AEDECON 3170	Agricultural Law	(minors) Business majors, all campus
BUS-FIN 3500	Legal Environment of Business	(minors) AED Econ major, all campus
ENR 7520	Environmental Science and Law	(minors) Business majors, all campus
<i>Choose one from:</i> AEDECON 3160	Human Resource Management in Small Businesses	(minors) All campus
BUS-MHR 3300	Managing Human Resources	AED Econ major, all campus
COMLDR 3530	Foundations of Personal and Professional Leadership	(minors) Business majors, all campus
COMLDR 4430	Leadership in Teams and Community Org	(minors) All campus

2. Discuss the adequacy of the courses.

Within the degree program, the supporting disciplines are Business, Agribusiness (AED ECON: Agricultural, Environmental, and Development Economics), Computer Science and Engineering (CSE). Data from senior exit interviews and performance in construction courses that build on the topics learned in supporting courses suggest that these courses are definitely adequate, and in some cases superlative. Some concerns have been raised about accounting courses which serve as “weed-out” courses for student in the business major, specifically ACCT&MIS 2200 Introduction to Accounting I. The CSM program has addressed this concern by adding another course to the list of accounting course options. AED ECON 2105 Managerial Records and Analysis, which is a more practical introduction to accounting and bookkeeping for our students.

To make sure that the agribusiness courses offered through the AED ECON program can adequately cover business and management fundamentals required by ACCE, the FABE department chair, the academic affairs committee chair, and the CSM program coordinators met with AED ECON course instructors during Autumn 2013 and Spring 2014 semesters. During the meetings, the course syllabi, learning objectives and topic outlines were carefully reviewed and discussed with the instructors. These led to a few agreed changes that are expected to enhance the learning experience and outcome of CSM students in these courses. We will continue to meet with the instructors on a regular basis annually.

In our current curriculum, Data Analysis—Statistics is a required course that is expected to help enhance the mathematical skills of CSM students. So, we believe that with additional statistics class we are in compliance with ACCE requirements. However, there is an ongoing discussion within the Department’s Academic Affairs Committee about raising the math requirements for the program by replacing Math 1148 College Algebra (4 cr. hr.) with Math 1150 Precalculus (5 cr. hr.). The syllabi for these two courses are attached in **Appendix B, Pages 117-121**. This proposed change is in agreement with the ACCE requirement.

IV. FACULTY

A. Current Staff

1. List the current faculty of the construction unit, including part-time and graduate instructors. List the full-time faculty first, grouped alphabetically within rank. Indicate the rank at the head of each group. Show the full-time equivalence (FTE) for each part-time faculty member (i.e., .25 for quarter-time). Indicate years on staff as of the end of the current academic year. Indicate tenure status and whether an academic year (9 mo.) or fiscal year (12 mo.) appointment.

Three tenure-track faculty (including the Fabe Chair) comprise the current departmental faculty. The demographic ethnic background of the faculty includes representation from China, Turkey, and the United States. There are currently 2 female and 1 male faculty members. All three of the faculty members have responsibilities with respect to the construction program either through direct teaching, advising, program administration, and/or research collaboration. These three are listed below in the tables of Figs. 19 and 22. Please see **Appendix A, Pages 53-77**, for faculty resumes.

Fig 19: Current Faculty and Instructor List

Name	FTE	Highest Degree	Yrs on Staff	Tenured	Tenure Track	Non-Tenure track	9 Mo.	12 Mo.
Full Professor								
Gonul Kaletunc	0.05	Ph.D.	17	Y			X	
Scott Shearer	0.1	Ph.D.	2.5	Y				X
Associate Professor								
Victoria Chen	1	Ph.D.	7	Y				X
Lecturers								
Dennis Albery	1	B.S.	35	N/A		X	X	
Beverly Barrick	0.5	M.A.	25	N/A		X		X
Anastasia Britt*	0.85	M.A.	5	N/A		X		
Eric Desmond	0.5	Ph.D.	35	N/A		X	X	
Larry Heckendorn	0.75	B.S.	17	N/A		X		X
Mark Scott	0.125	B.S.	8	N/A		X		X
William Shepherd*	0.8	B.S.	11	N/A		X		
Jeff Suchy	0.65	M.S.	5	N/A		X		X
W. Mac Ware	1	M.A.	5	N/A		X		X
Mark Banta	0.125	B.S.	6.5	N/A		X		X
Ralph Oliveti*	0.25	B.S.	0.3	N/A		X		
Doug Cooper*	0.25	B.S.	0.3	N/A		X		
Lisa Johnson	0.75	M.A.	8	N/A		X	X	

*Denotes instructors who are hired for 8 months (two semesters) a year.

2. List the current support staff of the construction unit and their assignments. Include clerical staff, technicians, and non-teaching graduate assistants. Indicate the percentage of full-time employment.

Fig 20: Current Support Staff

Name	% Full Time	Assignment
Michael Lichtensteiger	12%	Administrative Support
Val Stewart	30%	Classroom and Faculty Support
Chris Gecik	25%	Design Engineer
Jill Bryant	20%	Administrative Associate
Jim Fowler	20%	Administrative Associate
Jessica Diallo	20%	Administrative Associate
Behzad Abounia Omran	100% of a half-time appointment (20 hrs/week)	Graduate Teaching Assistant
Natasha Pereira	10% of a half-time appointment	Graduate Administrative Associate
Matt Karhoff	10 hrs/week on average	Laboratory Machinist
Neal Dudash	6 hrs/week on average	Undergraduate Teaching Assistant
Clay Cameron	10 hrs/week on average	Undergraduate Teaching Assistant

B. Staff Assignment Definitions

Define what constitutes a full-time staff assignment in the construction unit. Discuss institutional regulations that influence this definition. Include formulas and load factors for various courses and other activities.

A 40-hour-plus work week is typical for tenure-track faculty and some full-time staff. Teaching staff contracts and hours are determined by the number of lectures and labs they deliver each week and the office hours and student advising duties they hold. These vary and compensation and hours are determined accordingly. Part-time teaching staff typically deliver lectures and hold office hours; however, they do not advise students or complete additional duties.

C. Current Faculty Assignments

- 1. Provide data on faculty assignments for the most recent fall semester or quarter. List all faculty, full-time and part-time, by name. For each faculty member, indicate the courses taught, enrollment, and student credit hours (SCH). For each faculty member indicate the percent of time assigned to other activities and specify (i.e., administration, counseling).**

Fig 21: Current Faculty Assignments, Most recent Fall Semester (for those teaching CSM courses that semester)

Name	Course	Enrollment	Student Contact Hours	Other Assignments (with CSM)	
				% Time	Activity
Beverly Barrick	CSM 1100	29	14	49%	Advising students
Dennis Albery	CSM 2241	33	70		
	CSM 2310	36	70		
	CSM 3450	32	84		
Anastasia Britt	CSM 2305	26	42		
	CSM 4605	37	28		
Qian Chen	CSM 4641	36	42	25%	Research & advising students and student organization
	CSM 5670	14	56		
Eric Desmond	CSM 2440	24	84	5%	Advising students
Larry Heckendorn	CSM 2240	36	70	5%	Lab supervision
Mark Scott	CSM 4642	35	42		
William Shepherd	CSM 3545	22	70		
	CSM 3546	37	70		
Don Schafer	CSM 1205	58	42		
	CSM 4660	34	42		
Jeff Suchy	CSM 3451	28	84	15%	Advising students
	CSM 5680	13	42		
W. Mac Ware	CSM 2345	32	56	15%	Advising student organization and student competition teams
	CSM 3191	39	40		
	CSM 4900	33	42		

NOTE: This table includes only those who taught CSM courses, not those who serve supportive roles including administration, advising, and research. The percentage of time each individual spends on other assignments falls under his/her FTE specifically for the CSM program (see Fig. 19).

D. Compensation

1. **Provide data indicating the construction faculty salaries for the current year. Data that would reveal individual salaries may be omitted and provided directly to the visitation team. Indicate the average 9-month salaries by rank. Convert all 12-month salaries to 9-month salaries. Indicate the conversion factor from 12-month to 9-month salaries.**

Fig. 22: Current Salary Data

* Rank	No.	Average 9 Month Salary*	No. of 12 Month Appointments	No. of Resignations in past 5 years
Professor	2	118,068	1	0
Associate Professor	1	67,592	1	0
Assistant Professor	0	N.A.	0	0
Lecturers	7	52,019	2	1

NOTE: Conversion factor = 0.75 x (12-month salary)

2. **Briefly describe the benefits program for the faculty.**

The Ohio State University offers a comprehensive benefit package for full-time faculty and staff. Benefits offered include:

- Health – medical, dental, vision, prescription drugs, and more
- Flexible Spending Accounts – allows contribution through payroll deduction on a pre-tax basis for health care and/or dependent care
- Retirement – while employed at Ohio State, retirement contributions are invested with one of the state retirement plans
- Life Insurance – a variety of options are available to protect faculty and staff, and their dependents
- Education – Ohio State offers tuition assistance for eligible faculty and staff and their dependents
- Disability – integrated disability, long-term disability, short-term disability, workers' compensation, and more

3. Comments, if any.

E. Evaluation and Promotion Policies

1. Faculty Evaluation

Describe the procedures for evaluating the faculty of the construction unit.

Each winter (typically in January and February) all faculty and teaching staff prepare an Annual Report according to Departmental and College guidelines. An annual review meeting is then held between each faculty / teaching staff member and the Chair of the Department. The Chair provides a written statement on the performance of each member of the faculty, typically in the form of a letter or memo. For tenured faculty, these annual faculty performance evaluations are used to monitor performance, identify strengths and weaknesses, identify professional development needs, make short term departmental strategic decisions, and determine salary adjustments.

The Department understands that teaching embraces two distinct functions: resident classroom instruction and outreach (extension) education. Classroom instruction includes undergraduate and graduate instruction in formal courses, seminars, and individual studies. To judge the effectiveness of classroom instruction, faculty are evaluated on their ability to organize and present class materials with logic, conviction, and enthusiasm; creativity in course development, methods of presentation, and incorporation of new materials and ideas; ability to motivate students; command of subject including incorporation of recent developments into instruction; and contributions to curricular development.

The following formal instruments are used to evaluate the classroom performance of faculty and teaching staff: (1) a Student Evaluation of Instruction (SEI) report; and (2) a Peer Evaluation of Classroom Teaching. Samples of these evaluations will be available to the reviewers at the time of the review.

The SEI was introduced in 1994 replacing an earlier Student Evaluation of Teaching procedure. All faculty are expected to use some type of evaluation instrument for each course. Typically, sometime during the last two weeks of each semester, students receive email notification that the SEI web forms are active for all courses they are taking that semester. Students may enter their evaluations anonymously prior to the last day of class. The results of the evaluation are provided to the instructor a few weeks after the close of the semester being evaluated. These results, or some other formal evaluation for each course, are included in the Annual Report each faculty member prepares.

A Peer Evaluation of Classroom Teaching Policy was adopted by FAFE in February 1994. All FAFE faculty and teaching staff are encouraged to seek peer evaluations on a periodic basis. These evaluations are primarily used by the individual faculty member to make improvements in his or her course(s) and/or in their teaching methods. In addition, peer evaluations of teaching are a requirement of tenure and promotion considerations.

Each semester the department receives a summary of the grade distribution for each course they teach. Information for other departments can be obtained on request. This information can be used by the instructor to evaluate how the grades he or she has awarded compare to those awarded by instructors of other courses. Also, this information can be used by the Department to monitor the range of uniformity of student assessments (grades) being awarded in each course.

When FABE is authorized to hire additional faculty, a national search is conducted with a rigorous search process, including on-site interviews often lasting two to three days, to find the best, brightest and most capable faculty to fill the position. Retention is enhanced through a long established mentoring program, three or four faculty above the rank of the new hire are appointed to mentor the new faculty member while he or she learns about the Department. They respond to questions and concerns, helping to develop a dossier, and guide them through the promotion and tenure process until they reach full professorship. The FABE Department Chair also counsels new faculty members both informally and through the formal yearly performance evaluation process.

2. Tenure and Promotion

a. Indicate the number of current faculty members that have been promoted and/or achieved tenure during the past five years.

Fig. 23: Promotion and Tenure

Current Rank	No. Promoted	No. Tenured
Professor	1	
Associate Professor	1	1
Assistant Professor		
Instructor		

b. Briefly describe the tenure and promotion policies of the institution and the construction unit.

The university's Office of Academic Affairs oversees the promotion and tenure process for all colleges. Volume 3 of their Policy and Procedure Handbook <<http://oaa.osu.edu/assets/files/documents/HBVol3.pdf>> provides guidance for development of the candidate's dossier, scheduling of the review process, voting procedures, etc. Essentially, the process takes approximately ten months and involves six levels of review: (1) department promotion and tenure (P&T) committee, (2) department chair, (3) college P&T committee, (4) college dean, (5) university P&T committee, and (6) provost. Upon a favorable outcome to this point the OSU Board of Trustees then votes to award promotion and/or tenure to all of that year's successful candidates.

In addition to the annual reviews described in the previous section, all probationary faculty (untentured faculty) undergo a fourth year review which follows the same process as the review for tenure and promotion except outside letters of evaluation are not requested. A mandatory review for tenure is required in the sixth and final year of a probationary period. Tenured faculty may request they be considered for promotion at any time, but the decision to put forward their request is determined by the Departmental Professional Development Committee. The Department's procedures for promotion and tenure reviews are consistent with those set forth in OSU's Faculty Rule 3335-47-04 which states:

"All candidates for promotion and tenure are reviewed by the eligible faculty and by the chair of their tenure initiating unit. Candidates will also be reviewed at the college and university levels"

The Department and OSU place a high value on teaching. The Department endorses Faculty Rule 3335-47-02 (C) which states:

"The awarding of tenure and promotion to the rank of associate professor must be based on convincing evidence that the faculty member has achieved excellence as a teacher, as a scholar, and as one who

provides effective service; and can be expected to continue a program of high quality teaching, scholarship, and service relevant to the mission of the academic unit(s) to which the faculty member is assigned and to the university.”

and

“Promotion to the rank of professor must be based on convincing evidence that the faculty member has a sustained record of excellence in teaching; has produced a significant body of scholarship that is recognized nationally or internationally; and has demonstrated leadership in service.”

F. Professional Development

Discuss institutional and departmental policies related to:

1. Consulting

“Faculty members, including administrators with faculty appointments, are encouraged to engage in paid external consulting to the extent that these activities are clearly related to the mission of the university and the expertise of the faculty member, provide direct or indirect benefits to the university, and do not entail a conflict of interest as defined in the Conflict of Interest Policy.

“As a general rule, the proportion of a faculty member’s professional effort devoted to consulting should not exceed one business day per week. Prior approval must be obtained. Faculty members should avoid any conflict or appearance of conflict between consulting and university responsibilities. In particular, the disruption of formal instructional activities because of consulting must be avoided.” (quoted from OSU’s Office of Academic Affairs document on external consulting, <http://oaa.osu.edu/assets/files/documents/ExtCons.pdf>)

2. Professional associations

Faculty members are encouraged to be active members of one or more professional societies. Service to these societies as an elected officer is considered as an indicator of leadership and is viewed as a necessary component of a successful application for promotion and tenure. The department’s Pattern of Administration document (2007, p. APT-27) lists acceptable types of professional service: “Officers, editorial boards, committees, and task forces of professional associations; reviewing external manuscripts; regional and national research, teaching and outreach committees; state and local task forces; state and local advisory committees; industry advisory committees and industry task forces. Service to trade (clientele) organizations (e.g., officer of a trade association, executive secretary of a trade association). Member of board(s) of directors, consulting assignments.”

3. Publications and 4. Research

Tenure-track faculty members are expected to maintain scholarly productivity through publication of their research (with the highest quality being associated with peer review) and successfully seek external funding for their research. The department’s Pattern of Administration (2007, p. M-5) states that for “a regular on-duty faculty member with a 50 percent time allocation to research, creative and scholarly activities will generally be expected to meet the following guidelines. Expectations for faculty with allocations other than 50 percent will be appropriately adjusted.

- Refereed journal publications: 1-2 annually
- Other scientific publications: 1-2 annually (i.e., meeting papers, proceedings, book chapters, computer programs, etc.)
- Funding applications: 2-4 annually
- Funding awards: annual support available, even though obtained in previous years
- Scientific meeting presentations: 1-2 annually
- Graduate training and mentoring: major professor, 1-2 students; graduate committee, 2-4 students”

5. Continuing education

Faculty are encouraged to seek out opportunities for continuing education. The college provides funds on a competitive basis for educational enrichment and professional development. Most faculty direct their own development and use funds generated by their own grant proposals for conferences, registration fees, travel, and related educational expenses. The college offers annual opportunities for faculty to apply for professional development awards for the express purpose of enhancing the quality of their teaching duties. Each of the department's full-time teaching staff receive \$1,000 annually and may compete for more. Part-time teaching staff may request funds from the Chair for professional development.

In addition to departmental and college support, the University offers several resources that are free or at substantially discounted cost to teaching staff and faculty. The Office of Continuing Education offers courses for those seeking to enhance their knowledge through formal education. See their website at <http://ced.osu.edu/>.

The University also offers free courses for all faculty and staff through the University Center for Advancement of Teaching and through Computing Short Courses. For a list of service areas and topics, and for a current list of courses, see <http://ucat.osu.edu/> and http://cio.osu.edu/it_training/index.html.

Finally, all full-time faculty and staff are eligible to enroll at no cost for 1 – 10 credit hours of OSU coursework per semester.

V. STUDENTS

A. Admission Standards and Procedures

1. Describe standards and procedures for the admission of students to the construction program. Differentiate, if necessary, between freshmen, external transfers, and internal transfers.

Admission to The Ohio State University is based on the applicant's high school college preparatory classes, grades, and standardized test scores.

Students enter the CSM program by several routes. One is by direct enrollment in the College as a CSM pre-major when they enter the university. Many students enter the CSM program from the engineering undecided ranks in the College of Engineering, from previous enrollment in an Engineering program, the Fisher College of Business, the School of Architecture, or from the CSM Technical Program, such as ATI. Other students enter the program from other non-engineering programs within OSU or as a transfer from another university or community college.

- 1) Incoming freshman students are directly admitted to CSM upon acceptance to the University.
- 2) Transfer students from regional OSU campuses may come to main campus and either continue as CSM students or change to the CSM program after 30 hours of credit and earned a 2.0 or higher cumulative GPA at the Regional Campus.
- 3) Transfer students to OSU from other universities are accepted directly into the CSM program.
- 4) Students who began their studies under the Associates Program ATI can come to main campus after their first year at ATI, if they have attained a 2.0 GPA, or they can transfer to main campus after receiving their Associated Degree in CSM.

2. Describe the philosophy of the construction program related to transfer credits, substitutions for required courses, and advanced standing for transfer and special students.

The FABE Department has a high volume of transfer students entering into the BS in CSM degree program

from both internal and external sources. Students interested in transferring to the program from another institution must first apply to OSU's Office of Admissions. Domestic transfer students are required to have a 2.0 CPHR for admission to OSU. International applicants with more than 45 credit hours are required to have an academic record with the equivalent of at least a 3.0 cumulative point-hour ratio on a 4.0 scale to be considered for direct admission to CSM. International applicants with less than 45 credit hours must have followed a college preparatory high school curriculum and earned a minimum overall GPA of 2.5 in college courses.

OSU's Office of Admissions accepts credit for major courses from another institution deemed equivalent to a course at OSU in which the student obtained a grade of "C-" or higher and adjusts the number of credit hours being applied to the OSU program in accommodation of any academic calendar differences between the two institutions. Courses for which the Office of Admissions is unable to determine a closely matching course at OSU are given the designation "General Credit" or "Special Credit." Students who want to use a course given "General Credit" or "Special Credit" status should have that course evaluated by the corresponding department at OSU, usually using an original syllabus from the previous institution, and/or the textbook and/or class notes.

Alternatively, these same materials may be reviewed by members of the Departmental faculty with an expertise in that given area, if available; and if deemed sufficiently equivalent, permission to substitute the transfer course may be given directly without another department's involvement in the evaluation process. Courses so evaluated and deemed to be equivalent are then eligible for use in lieu of the originally required course in that program's curriculum.

3. Describe the control the construction unit has over the quantity and quality of new students.

The Department has thus far chosen not to enact enrollment management strategies (i.e., capping student numbers by elevating the admission requirements above those needed for admission into the university and college). Quality of students has been steadily increasing university-wide due to selective enrollment policies. In 1997, OSU transitioned from an open-enrollment system, where virtually all applicants with minimum requirements were accepted, to selective enrollment. In each successive year, the quality of incoming students has increased, making each incoming freshmen class the best ever. In 1995, the average ACT test score of incoming freshmen was 22.8, and in 2010, the average ACT score for incoming freshmen was 27.8, a record high. Also setting records were the average SAT (1235) score and the percentage of students graduating in the top 10 percent of their high school class (54%). The CSM program has been the beneficiary of this increasing quality in the student profiles from test scores to high school rankings.

4. Comments, if any.

B. Quality of New Students

1. Indicate the quality of the new students for the most recent full year. Show the average values.

Fig. 24: Quality of New Students

Year (Au 13 - Sp 14)	ACT-SAT Scores		
	Verbal	Math	V&M
Beginners	23.0	28.5	25.8
Internal Transfers	24.0	26.0	25.0
External Transfers	-	-	-
Total	23.97	26.07	25.01

2. Comments, if any.

C. Enrollment Data

1. **Indicate the total number of students enrolled in the construction program during the fall semester or quarter for the past five years.**

Fig. 25: Enrollment

Year	2009	2010	2011	2012	2013
Undergraduates					
Freshmen*	10	6	7	3	6
Sophomores	47	39	39	33	42
Juniors	119	94	69	68	58
Seniors	210	209	193	151	141
Total Undergraduates	386	348	308	255	247
Graduate Students					
Masters	N/A	N/A	N/A	N/A	N/A
Doctoral	N/A	N/A	N/A	N/A	N/A
Total All Students	386	348	308	255	247

*Ohio State ranks students in all the undergraduate colleges based on total credit hours completed and recorded. This ranking system is as follows:

- Freshman (Rank #1) - 0 to 29 credit hours
- Sophomore (Rank #2) – 30 to 59 credit hours
- Junior (Rank #3) – 60 to 89 credit hours; and
- Senior (Rank # 4) – 90 credit hours and above

The majority of our CSM students transfer from other programs within the university or from other schools. Therefore, many of them have already accumulated credit hours sufficient to be considered Rank 4 students at the time they enrolled in our program. Consequently, it is common for a student to be listed as a senior even though he or she has several of the sophomore or junior level curriculum classes yet to complete. Therefore, in Figure 25, the number of students shown as “seniors” appears to be much larger in comparison with Junior level students. Similarly, Junior level student numbers are approximately two times the number of students as Sophomores. A more realistic number of senior students can be defined by the number of students graduated in a given year as shown in Figure 29.

2. **Provide tabular data that indicate the approximate number of full-time and part-time undergraduate students for the fall semester or quarter for the past five years. Define the institution's method of accounting for part-time students.**

Full time enrollment for undergraduates is defined as 12 credit hours per semester. Fewer credit hours taken are considered part-time enrollment. To graduate in four years requires a student to enroll in 15 to 18 credit hours per semester.

Year	2009	2010	2011	2012	2013
Full-time	353	322	287	228	215
Part-time	33	26	21	27	32
Total	386	348	308	255	247

3. **Comments, if any.**

D. Grading System

1. Briefly describe the institution's grading system.

“A student's performance in a course is evaluated by the course instructor. At Ohio State, the most commonly used system consists of letter grades (A, B, C, D, E), which may be further distinguished by either a plus (+) or minus (-). The grading system, like many other colleges and universities, is based on a four-point scale. Grade "A" is 4 points, grade "B" is 3 points, grade "C" is 2 points, grade "D" is 1 point, and grade "E" is 0 points. Credit hours are multiplied by the grades to determine a student's "grade-point average" (GPA).”

The range of letter grade values on the 4.0 scale are as follows:

4.0 A
3.7 A-
3.3 B+
3.0 B
2.7 B-
2.3 C+
2.0 C
1.7 C-
1.3 D+
1.0 D
0.0 E (Failure)

Credit hours are multiplied by the total course grades' points to determine a student's overall "grade-point average" (GPA). All courses within the BS in CSM program are graded using this scale. Point totals or percentages are listed on the course syllabus provided to all students enrolled in the course.

2. Describe any special grade requirements established by the construction unit.

There are no special grade requirements for CSM students beyond those common to the college and university.

3. Describe the institution's procedure for recognizing academic excellence.

Academic excellence in our undergraduate CSM students is recognized through participation in honors and scholars activities, scholarship awards, honorary society memberships, semester dean's lists, and Latin Honors at graduation. Students graduate with Latin Honors when their cumulative grade point average (GPA) is 3.5 or higher, according to the following framework:

Graduation Cum laude: 3.5-3.69 GPA
Graduation Magna cum laude: 3.7-3.89 GPA
Graduation Summa cum laude: 3.9 GPA and above

In addition to graduation with Latin Honors, honors students may graduate with (1) Honors in the discipline by completing the requirements for their college honors program, (2) Distinction by completing an honors thesis or (3) Honors in the discipline and with distinction by completing both.

4. Describe the institution's procedure related to poor student performance - probation, suspension, and readmission.

VI. Academics: Academic Difficulty: A student whose cumulative grade point average (GPA) falls below 2.0 is considered to be in academic difficulty. This can lead to academic probation or dismissal. Students who feel they are in academic difficulty (even with a cumulative GPA above 2.0) should visit the college academic advisor as soon as possible to discuss the issues that may be affecting the student's academic

prowess and to receive advice on how to improve his or her academic performance.
<http://cfaes.osu.edu/students/node/938>

Academic Probation: A student will be placed on academic probation when his or her cumulative GPA falls below the minimum 2.0. The College Office will notify the student of their status and will specify the conditions of probation, including the minimum grade-point average that must be earned in the following semester to avoid academic dismissal. The student should consult with an academic advisor immediately upon learning of their probationary status to discuss improvements that must be made and to seek advice about how to achieve an improved GPA. Once the student's cumulative GPA reaches a 2.0, he or she is once again considered to be in good academic standing and may be removed from probation. While on probation, the student's registration window will be locked. The student must seek a consultation with the faculty advisor before this lock can be lifted and registration proceed.
<http://cfaes.osu.edu/students/node/940>

VII. Academic Dismissal: Any student in academic difficulty is at risk of being dismissed from the university. There is no particular cumulative GPA that warrants a dismissal. These decisions are made on a case-by-case basis and given serious consideration by the college office. Dismissed students will be notified of their status via e-mail including an attached letter of notification.
<http://cfaes.osu.edu/students/node/941>

5. Comments, if any.

E. Academic Success and Failure

- 1. Indicate the number and percentage of the students that were on the honor roll during the past year.**

Fig. 26: Honor Roll Students

Year	Spring 13		Fall 13	
	No.	%	No.	%
Freshmen	3	1.1	8	2.8
Sophomores	11	4	10	3.5
Juniors	10	3.6	13	3.5
Seniors	16	3.8	13	4.6
Total	40	14.6	44	15.5

Note: The data for Spring 14 is not available. So we list the data for the most recent two semesters.

- 2. Indicate the number and percentage of students that were on academic probation during the past year.**

Fig. 27: Probation Students

Year	Spring 13		Fall 13	
	No.	%	No.	%
Freshmen	3	1.1	1	0.35
Sophomores	2	0.7	0	0
Juniors	7	2.6	4	1.4
Seniors	2	0.7	7	2.5
Total	14	5.1	12	4.2

- 3. Indicate the number and percentage of students that were lost due to dismissal, withdrawal from the institution, or transfer to another program during the past year. Do not include graduates.**

Fig. 28: Attrition

Year	Spring 13		Fall 13	
	No.	%	No.	%
Freshmen	0	0	0	0
Sophomores	0	0	0	2
Juniors	4	1.5	2	0.7
Seniors	0	0	0	0
Total	4	1.5	2	0.7

F. Record Keeping

1. Describe the academic record-keeping procedures of the construction unit, including the final graduation audit. Include, in the appendix, a copy of principal forms used.

Student records are maintained online in a PeopleSoft system database by the Office of the University Registrar, and can be accessed by persons with proper security clearance through Buckeye Link, Ohio State's Online Academic Center, at <http://buckeyelink.osu.edu/>.

Hardcopies of student records, checked-off curriculum advising sheets, and filled-out four-year plans (aka "bingo sheets") are also kept in the college office by the Assistant Dean of Academic Affairs / College Secretary for the College of Food, Agricultural, and Environmental Sciences, and in the department advising office by the Academic Program Coordinator. The current curriculum advising sheet can be downloaded from the departmental website at

<http://fabe.osu.edu/sites/fabe/files/imce/files/CurrSheets/Construction%20Systems%20Management%20New%20Logo%20July%202013.pdf>, see **Appendix D, Page 125**. The departmental four-year plan (aka "bingo sheet") can be downloaded from the departmental webpage at

<http://fabe.osu.edu/sites/fabe/files/imce/files/CurrSheets/CSM%20Curriculum%206-2013.pdf>, attached as **Appendix E, Page 127**.

An electronic degree audit system, DARwin, is maintained by the Office of the University Registrar. DARwin is the application that advisors and students use to run Degree Audit Reports for monitoring progress toward graduation and reminding students of what courses remain to be taken in order to meet their degree requirements. An example of a DARwin audit for a CSM student is attached in **Appendix H, Pages 133-135**. The final graduation audit is performed by the Assistant Dean of Academic Affairs / College Secretary for the College of Food, Agricultural, and Environmental Sciences using both DARwin and the curriculum advising sheet.

2. Describe the interface with the institutional record-keeping system.

The institutional record-keeping system has a web-based interface. Students may use their unique login ID (name.number) and password to review their academic records online, or they may review their files by appointment with the college's Assistant Dean or the department's Academic Program Coordinator.

3. Comments, if any.

G. Academic Advisement

1. Describe the academic advisement procedure used by the construction program.

The position of Undergraduate Academic Program Coordinator (hereafter referred to as "the coordinating advisor") was established in 2001 to provide general student advising, recruitment and student recordkeeping for the Department. Ms. Beverly Barrick has served in that role since its inception.

The CSM coordinating advisor, Ms. Beverly Barrick, whose position is primarily administrative on the students' behalf, assigns each student a faculty advisor from whom they seek advice for career and curriculum questions. The coordinating advisor and the faculty advisor work in tandem to assure a timely and appropriate response to student inquiries and concerns.

In addition, the College of FAES has two fulltime, professional academic advisors who serve under different titles. These advisors and the Academic Program Coordinator work with students enrolled in the CSM program to solve scheduling problems as well as help them if they are having academic difficulties. They also teach a survey course required of all entering first-year students. Sections of this course are offered by the Department (CSM 1100, 0.5 cr. hr.) and by the College (FAES 1100, 0.5 cr. hr.).

The survey course serves as an introduction to the University community and includes strategies for successful transition to, and participation in that community. The course emphasizes the institutional context of academic programs, education and learning as life-long processes. It also covers University policies and procedures. Career planning activities include development of a four semester projection of courses to be taken.

Further advising is accomplished in the Professional Development I course, CONSYSMT 2305, where students are required to write the plan for their entire academic career, including their internship.

2. List the faculty members who are serving as academic advisors, and indicate the number of students assigned to each.

Name*	Number of Advisees
Lisa Johnson	84
Qian Chen	83
Eric Desmond (Advisor or another program)	5
Michael J. Lichtensteiger	28
Jeffrey T. Suchy	82

3. Comments, if any.

H. Student Activities

1. List the student organizations that are sponsored by the construction unit and/or are primarily for construction students. Include the organization name, the approximate number of members or participants, and a brief statement of purposes and/or activities.

Students in the CSM program are encouraged to attend meetings and get involved in the extracurricular activities of the department and of other related departments:

- CSM Club: The club offers students many networking opportunities with their peers and industry representatives both locally and nationally. Club activities include leadership development, community outreach, and service learning. Club meetings feature guest speakers, industry-oriented programs, or social and recreational activities. Upper level students who maintain a record of superior academic achievements are invited to membership in Alpha Mu, the CSM national honorary student organization.
- Student interaction with the Industry Advisory Council: Recently the IAC proposed to become more active with the CSM students. The first event was a "Meet & Greet" held before the Departmental Spring Banquet, it was attended by several IAC members and approximately 45 CSM students.

- Mentoring Program: The annual mentoring program aims to introduce undergraduate students to the profession and culture of the construction industry. Representatives of the construction industry (Mentors) help students (on a one-to-one basis) establish their goals and develop the skills needed to be successful in construction following graduation. 20-25 students participate in each year's program.
- ABC National Construction Management Student Competition: CSM students have competed in the National Competition since 2009. The student teams have placed in the top five several times and were crowned "National Champions" in the Spring of 2013.
- Associated Schools of Construction Regional Student Competition: a CSM team participated in the Autumn 2013 competition in Chicago where they placed 3rd in the Healthcare category.
- Regional CSM freshman and sophomore provided by Univ. of Cincinnati: Univ. of Cincinnati created and held a smaller competition for "newB's" (freshmen and sophomores), there were three divisions, Commercial, Tenant Fit Out and Heavy & Highway, the OSU Team took 1st place in the Commercial Division in March, 2013.

2. Describe the extent to which construction students participate in course and faculty evaluation, in curriculum development and revision, and in other student-faculty activities.

CSM students are encouraged to complete the "student evaluation" at the end of each course; these results are reviewed by the course instructor and the administration. CSM students also complete an "exit survey" during their final semester this is an avenue for the student to evaluate the entire program.

3. Describe the extent to which construction students participate in campus-wide activities.

The CSM students also participated in the following campus-wide activities:

- Habitat for Humanity <http://habitatforhumanity.osu.edu/>

Habitat for Humanity at the Ohio State University works to eliminate substandard housing in our community, country, and around the world. Many of our CSM students serve their respective internship at Habitat. They work with us to provide a fruitful time for the students. Additionally, our CSM club typically will hold one or two work days through the academic year and assist Habitat in the construction of a home.

- Solar Decathlon (2009) <http://solardecathlon.osu.edu/2009/> and Solar Decathlon (2011) <http://solardecathlon.osu.edu>

The Solar Decathlon competition challenges twenty university teams from around the world to develop the best solar-powered house, achieving excellence in each of 10 contest areas. CSM instructors and students were involved in the design and construction of these two houses developed by the OSU teams. One of the houses was assembled in the courtyard of our AE building.

The Ohio State University offers a wide variety of Student Activities which all students are encouraged to explore. These may be viewed on the Student Activities website: http://ohiounion.osu.edu/get_involved/student_organizations/directory

4. Comments, if any.

I. Graduates and Placement Data

1. Indicate the number of degrees awarded during the past five years.

Fig. 29: Number of Graduates

Year	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014
Associate	-	-	-	-	-
Baccalaureate	157	131	126	81	80
Masters	-	-	-	-	-
Doctorate	-	-	-	-	-

2. Indicate the first career step of the graduates of the past year. Show the number of graduates in each category.

Fig. 30: Placement Data (Au 2013 and Sp 2014)

Type of Employer	No. Graduates
Construction related employment	15
Construction or construction management firm	27
Material or equipment supplier	-
Owner (utility, R.R., etc.)	1
Design or development	2
Other (military, public service, etc.)	5
Continuing education	2
Other	-
Non-construction employment	-
Seeking employment	25
No information	-
Total	76

Note: The data shown in Fig. 30 is from the online exit survey taken by CSM students at graduation.

3. The average annual salary for the above graduates is \$45,000.

4. Describe the design of alumni tracking objectives, documents, and procedures.

The departments are not allowed to contact directly with alumni. College of Food, Agricultural and Environmental Sciences contacts alumni with:

- An in person survey at graduation ceremony.
- An email survey three months post-graduation.
- A phone survey six months post-graduation.

The information to be sought in these surveys includes: company name, job title, job location, the start date of the position, and salary or the grad school they are attending.

The department administers an on-line exit survey during the graduation semester. This survey has the following objectives:

- Learn whether the CSM program meets its objectives
- Learn students' feedback on the contents, sequencing and learning experience for CSM courses
- Learn student's experience with their academic advisor and faculty advisors
- Learn students' feedback on usefulness of the departmental website
- Learn students' thoughts on the physical quality and maintenance of the department's facilities (including classrooms, student lounge, laboratory equipment, computer labs)
- Learn students' experience on co-curricular activities, including internships, study abroad, research, and extra-curricular groups
- Learn their current plans upon graduation and starting salary if they have a job offer.

5. Provide examples of survey or other documents used, and a summary of the results of the most recent follow-up study.

An example of departmental online exit survey can be seen in **Appendix L, Pages 148-155**. The following are the results from the last two academic years:

- 2012-2013: 81 graduated. The average salary was \$42,630 per year and 64% of the students had positions at the time of graduation.
- 2013-2014: 76 graduated. The average salary was \$45,000 per year and 67% of the students had positions at the time of graduation.

The results of the **6-month post-graduation follow-up surveys** are included in **Appendix M, Page 157**. The results show that our CSM students' starting salary ranges from \$43,000 to \$49,000 during 2008-2013. The 6-month post-graduation placement rates range from 89.35% to 95.10% for the period of 2006-2013. Based on the survey results, on average 65% of our CSM students have a job offer at the time of graduation and on average 90% of the graduates have a job in 6 months of graduation. Also, on average 10% of the students in the program are part-time and working at a job related to the construction industry.

J. Other

If scholarships or other financial aid is available to students in the program, please indicate.

Several local industry associations offer scholarships to our CSM students. Several FABE faculty members offer individual scholarship amounts to CSM students. Two departmental scholarships are also available to CSM students.

VI. FACILITIES AND SERVICES

A. Laboratories

1. List the laboratories used for courses taught by the construction unit. Briefly describe the space, including furnishings and equipment. List the construction courses that use the space on a scheduled basis.

The Department is housed in a modern 97,000 square foot facility completed in 1986. This building, called the Agricultural Engineering (AE) Building, has an excellent range of laboratory and classroom facilities are available for use in the CSM program.

Fig. 31: Laboratories

Bldg.	Room No.	Approx. Area (sq ft)	Laboratory Name	Description	Course
AE	137	2,920	Mechanical research – HVAC lab	HVAC system demonstrations	Can be used for special projects and class demonstration purpose
AE	140	1,024	Electronics repair and calibration	Electronic repair tools and devices, tool cabinets, desks and chairs	Resource for all labs
AE	142	1,216	Teaching laboratory/classroom	Lab stations are set up within the room for each lab exercise for some courses. Others use this room for lab preparation then move on to another lab	CSM 2310
AE	145	5,032	Departmental machine shop	Metal working equipment and tools, Plasma welders, and tool cabinets	Resource for all labs
AE	148	1,243	Teaching laboratory/classroom	Lab stations are set up within the room for each lab exercise for some courses. Others use this room for lab preparation then move on to another lab	CSM 2240, 3451, 3545, 3546, & 5680
AE	156	3,249	Wood and concrete lab	Central vacuum system, Concrete mixing and testing equipment, table saws, numerous construction tools, material storage space, blackboard, large tables with movable seats, and tool cabinets	CSM 2241 & 2310
AE	158	3,249	Metal fabrication and welding lab	Welding stations, metallurgy, cutting and burning equipment, etc.	CSM 2240
AE	164	2,930	Small engines lab	Survey labs including desktops for survey calculations	CSM 2440; can be used for special projects
AE	166	2,589	New lab/classroom space	Plumbing demonstrations regarding pipe friction loss, flow calculation, etc.	Can be used for special projects or class demonstrations

2. Discuss whether the space is shared with other academic units and who controls the assignment of the space

All the lab spaces are shared with academic programs in the Department and fully controlled by the Department.

B. Classrooms

1. List the classrooms used for courses taught by the construction unit. Indicate the seating capacity, furnishing (i.e., fixed seats, tablet-arm chairs), and environmental problems (i.e., lighting, cooling, noise, sun control).

Fig. 32: Classrooms

Bldg.	Room No.	Approx. Area (sq ft)	Capacity	Furnishings	Environmental Problems
AE	100	1,960	100	PC, projector, multi-media equipment, document camera, blackboard, fixed tables with movable chairs	No.
AE	103	1,571	50	PC, projector, multi-media equipment, document camera, Smart Board, blackboard, movable tables and chairs	No.
AE	104	1,176	50	PC, projector, multi-media equipment, document camera, blackboard, movable tables and chairs	No.
AE	142	1,216	30	PC, projector, multi-media equipment, document camera, blackboard, movable tables and chairs	No.
AE	148	1,243	30	PC, projector, multi-media equipment, document camera, blackboard, movable tables and chairs	No.

The classrooms have capacities which range from 30 (Rooms 142 & 148) to 100 (Room 100) and contain modern furniture, extensive blackboard space, and a range of multi-media equipment. Each of the Department's classrooms is equipped with a PC running MS Windows, MS Office and various other software, a DVD, LCD projector, document camera, and audio system.

2. Discuss whether the space is shared with other academic units and who controls the assignment of the space

All the classrooms are shared with other academic programs in the Department. Rooms 142 and 148 are fully controlled by the Department while other classrooms are in university classroom pool and controlled by the University's Registrar's Office. However, courses taught by the Department have priorities to be scheduled in these rooms.

C. Staff Offices

1. List the staff offices for the construction educational unit. List sequentially by building and room number.

Fig. 33: Staff Offices

Bldg	Room Number	Approximately Area (sq ft)	Occupant
AE	145A	238	Dennis Albery
AE	145A	238	William Shepherd
AE	158A	242	Larry Heckendorn
AE	200A	210	Scott Shearer
AE	209	154	Jeff Suchy
AE	208	154	Mac Ware
AE	222	154	Eric Desmond
AE	228A	154	Qian Chen
AE	212	154	Lisa Johnson
AE	209	154	Anastasia Britt
AE	260B	168	Barrick Beverly

2. Discuss the location of staff offices on campus, including proximity to secretarial services, classrooms, laboratories, library, and computer.

All full time teaching staff have private offices in the AE building, which allows immediate access to secretarial services, classrooms, and laboratories. These offices are equipped with their choice of a PC or Mac computer, printer and network printer, telephone, filing cabinets, shelving, and several visitor chairs. The building is close to the Food, Agricultural and Environmental Sciences Library and not far away from other university libraries. Also, OSU libraries can deliver the materials requested by faculty and staff members to their offices if preferred. Part-time teaching staff share a similar office space with two or three other staff members.

D. Library

The books and periodicals related to construction are mainly located in the OSU Science and Engineering Library (SEL), the Architecture Library, and the Food, Agricultural and Environmental Sciences (FAES) Library.

The OSU Science and Engineering Library (SEL) opened in January 1993 in a new building designed by Philip Johnson and built to house the merged collections of six libraries: Engineering/Architecture, Materials Engineering, Astronomy, Chemistry, Physics, and Mathematics. The SEL is a five-story building just under 70,000 square feet, seating for 725 people, and 24 hour access. SEL is open 360 days a year. Staff provides assistance from 8am - 12 midnight; access (with a valid OSU ID) is available 11:30pm - 8am.

The Architecture Library collection contains approximately 52,000 books, report and plans, and 200 journal subscriptions in the subject areas of Architecture (i.e., history and theory, sustainability and green design, innovative materials, digital fabrication, computer-aided design, interior design and other design related disciplines), City and Regional Planning, and Landscape Architecture. It also hosts the Knowlton School of Architecture (KSA) Digital Library on the second floor of the library to provide archival video and DVD copies of KSA lectures presented by internationally known designers and city planners.

The Food, Agricultural and Environmental Sciences (FAES) Library was established in 1956 and serves undergraduate and graduate students in the College of Food, Agricultural, and Environmental Sciences. It is one of 26 libraries in The Ohio State Libraries system. The FAES Library subscribes to approximately 1,140 journals and contains over 87,000 volumes.

Faculty and students can visit the libraries in person for books, printed journals, and other audio/video materials. They can also get access to E-books and subscribed journals in electronic format through the online database both on campus and off campus (through Off-campus Sign-in). The libraries also offer delivery services to faculty (via their office location) and students (via their dormitory rooms) or deliver the books to a library they request for pick up.

Library users can also get access to materials not currently hold by OSU libraries through the Ohio Link (including libraries within Ohio), CIC (Committee on Institutional Cooperation) shared agreements, and interlibrary loan without additional costs. Faculty can request the purchase of specific books and the subscription of particular journals they select for their fields. They can also place items on E-reserve in Carmen (OSU's online course management system) using the E-reserve request form. The E-books or journal articles requested will then be made available on the Carmen site.

Fig. 34: Library Holdings

	Since last accreditation		Total	
	Books	Periodicals	Books	Periodicals
Construction	N.A.	N.A.	10,215	4,428
Architecture and Engineering (civil/construction engineering)	N.A.	N.A.	53,944	21,704
Business and Management	N.A.	N.A.	28,419	1,744
Total Institutional Library	N.A.	N.A.	7,025,345	

E. Audiovisual Services

OSU has a Digital Union unit under the Office of Distance Education and eLearning. They help students, staff, and faculty with digital content creation, including everything from documents and spreadsheets, to graphics and video. Print a research poster, finish a lab report, record a voiceover, design a flyer, or learn a new program with Lynda tutorials, all at the Digital Unions. There are three campus locations. Each location features brand new computers with relevant software for projects involving video, audio, photos, web graphics, documents, spreadsheets, and presentations. A recording studio is also available through reservations.

Each of the five classrooms in the Department building are equipped with a PC running MS Windows, MS Office, and various other software, a DVD, LCD projector, audio system, and internet access. In addition, our Ag Eng. classroom #103 features a large Smart Board.

F. Computer Facilities

Computer use in the CSM program is multifaceted, and occurs throughout the program. Most courses use assignments that require spreadsheets and word processing. Courses requiring student presentations frequently require use of presentation graphics capability. Courses with a significant drafting component usually require CAD.

Additionally, the department owns two rolling laptop carts, each equipped with 30 Windows laptop computers, a wireless printer and wireless Internet access.

CSM students have full access to the “Computer Lab” that includes 74 PC workstations running MS Windows, MS Office, MS Project, AutoCAD and other specialized software. The specialized software, linked by server to all the machines, includes AutoCAD Civil 3D, MS Project, Autodesk Revit and other packages currently used by the construction industry. The Industry Advisory Committee is continually surveyed to identify other titles which the IT staff will procure for the server.

The lab provides students with keycard access to the building and computer labs on a 24/7 basis.

The CSM students also have full access to all other computing facilities within the College of Engineering Region 1, including large format printers/plotters, scanners, and other hardware.

G. Alternate Methods for Course Delivery

Alternate course delivery methods have been implemented in the construction unit when needed. For example, the lectures for the CSM 4900 Capstone class are recorded and posted on Buckeye Box “cloud”. These videos are available to the class for additional review or to view if they have had to miss a class session. If and when they view the session, they are asked to write a Memo describing what was discussed.

The FABE Department has initiated the use of a Polycom video conference connection for simultaneous course delivery to the Columbus and Lima campuses (e.g., for CSM 2305 Professional Development I). Students at the Columbus campus attend class in a video conference classroom equipped with five monitors and four multi-point cameras. Students at the Lima campus attend class in a video conference classroom equipped with two projectors and two multi-point cameras. At both the Lima and Columbus campuses an on-site video technician monitors the Polycom video connection. Outside of class, students receive instructional support through traditional face-to-face conferences, phone consultations, and facetime/Google hangout consultations.

The Ohio State University also offers course support through an online course management software resource, Desire to Learn. The university version of this resource is called Carmen. Information about Carmen can be found at <http://telr.osu.edu/carmen/about/>.

Faculty and staff receive space and support to place course materials, online drop boxes for assignments, a grade book, and other tools on this “Carmen” resource. Students use their OSU unique user name and password to access a view of the course site. Most faculty post syllabi, handouts and assignments, lecture notes, MS PowerPoint presentations, and links to other online resources on this site to support student learning.

H. Placement Services

Students in the CSM program are provided with extensive support for professional development, career development, resume and cover letter writing, job searching, and interviewing. The core curriculum includes three courses, 2305, 4605, and 3191, with substantial components focused on career skills.

The college offers two annual career expos specifically for CSM students, one in the fall and one in the winter. Generally between 20 and 40 companies from the US, Canada and with offices abroad send staff to the expo to meet, interview and select CSM students for internships, Co-ops, and entry level positions. The website for the Career Expo is <http://cfaes.osu.edu/students/careers/career-expos>

In addition, the College of FAES offers a Career Services Center that CSM students are required to use as part of the requirements for CSM 4605. The Career Services Center maintains a staff of four full time employees to assist students in their career development. Students receive additional help in developing their resumes, cover letters and interviewing skills. They can also get help locating potential job postings to which to apply. The website for the Career Services Center is <http://cfaes.osu.edu/students/careers>.

The Career Services Center maintains a database of student resumes that registered employers may review and job postings that students can review and apply for. Students must post their resumes to this database while they are registered for CSM 4605. This database is called Hire A Buckeye and can be viewed at: <http://cfaes.osu.edu/students/careers/hireabuckeye>.

The CSM student club and the annual CSM mentoring program all provide additional networking and professional development opportunities to CSM students. By interacting with industry representatives, CSM students can get access to internship and permanent employment opportunities.

VII. RELATIONS WITH INDUSTRY

A. Advisory Committee

The Department has established and maintains a close working relationship with many industry partners. The practice began quite naturally as a result of OSU’s history as a state land grant institution and has developed from there to the extensive level the department practices today.

The entire CSM Advisory Committee meets three times annually, and subcommittees meet more frequently. Currently there are subcommittees for curriculum, mentoring, accreditation, marketing, industry outreach, and research.

Members of the department work regularly with members of Industry on projects related to the content of CSM courses, special student projects, such as the Estimating Team, and on Advisory Committee assignments. For example, a local safety consulting firm assists in the preparation and delivery of segments of the Construction Safety course (CSM 2600), and members of the advisory committee attend Professional Development II (CSM 4605) as Mock Interviewers to give the CSM students practice in interviewing and to help them improve their skills.

B. Contributions

The CSM Advisory Committee has contributed to the CSM program in many ways. In addition to providing ideas regarding course content, lab modules and field experiences, the committee members review student materials such as the Career Portfolio and provide both the students and the department with helpful feedback.

For the past six years, a subcommittee on Mentoring has provided 20-25 students annually with one-on-one mentoring in CSM activities. Students are recruited by the faculty coordinator through the CSM students email list serve. Priorities are given to students who are new to the CSM program at freshman, sophomore, or junior ranks. Mentors are matched with students based upon mutual interests.

In the past, several advisory committee member companies have donated computers and software to the program for student use. Also, a number of construction trade associations and contractors have donated money to the program for student competition, scholarships, and other usages.

Fig. 35: Total Contributions

	Previous Year		Five Year Total	
	No.	Amount	No.	Amount
Construction Association	4	\$17,500	5	\$42,500
Contractors	25	\$12,000	43	\$66,500
Alumni	-	-	-	-
Faculty	-	-	--	-
Individuals	-	-	-	-
Other	-	-	-	-
Totals	29	\$29,500	48	\$109,000

C. Seminars and Short Courses

1. Indicate the seminars and short courses conducted by the construction faculty for the construction industry during the past year. Indicate the names of the construction faculty that participated as chairmen, group leaders, lecturers, etc.

Fig. 36: Seminars and Short Courses

Dates	Description	No. of Participants	Faculty Participants
Feb. 19, 2014	Volunteered as an instructor in the BX's "Layman's Look at Construction"	20	Mac. Ware

2. Comments, if any.

D. Research

1. Indicate research, both sponsored and unsponsored, conducted by the construction educational unit during the past five years. Indicate the sponsors, the amount of the funding, and the major investigator(s).

Fig. 37: Research

Dates	Description	Sponsor	Amount (\$)	Major Investigator
Jun. 2010 – Dec. 2011	Safety4Site commitment: An effective approach to enhancing jobsite safety management and safety culture	Messer Construction Co.	22,500	Chen, Q.
Jul. 2012 – Jun. 2013	A Statistical modeling approach to studying the effects of waste on “green” concrete properties	LaFarge North America, Haydite Hydraulic Press Brick Company, Geotechnical Consultants Inc., and Anderson Concrete Corp.	Providing testing materials and supplies	Chen, Q. & Jin, R (Ph.D. student)

2. Comments, if any.

E. Work Experience Programs

CSM students are required to complete one documented internship for two credit hours (CSM 3191). They are encouraged to seek additional similar experiences before graduation, especially by undertaking two internships in a row thereby giving them a full 6 to 7 month co-op experience. Many students undertake at least two internships with separate companies and often receive an offer for an entry level position upon graduation. Staff from many of the companies with which students intern participate in the CSM Advisory Committee.

F. Placement Assistance

Members of the CSM Advisory Committee and staff from other national CSM companies attend the CSM Career Expo in October and February annually. Generally 80-100 students are interviewed during each of these events, either for internships or entry level positions. Many students are selected. For example, Kiewit has hired 20 student interns from the CSM program at Ohio State and has made entry-level offers to hire 8 graduates in the past two years.

G. Student-Industry Interaction

1. List the national construction association that sponsor student organizations affiliated with the construction educational unit. Describe the interaction with the sponsoring association.

Within our CSM Student Club, various club members are assigned as the liaison to local chapters of national industry associations. One such connection is with the local Associated General Contractors (AGC); one or two of our students attend AGC functions and report back to the CSM student club. The local Associated Builders & Contractors (ABC) actually sponsors our student competition team for the national CM competition held at the national ABC convention. We also have a connection to the local Builders Institute of America (BIA). Of course, given the lack of activity in the residential market, this has been dormant for the last 4 years. A representative from BIA attended our last IAC meeting and we will re-activate the relationship with the local BIA.

2. List the major field trips taken during the past year. Include the job location, the number of participants, and the associated course, if any.

Job location	The number of participants	The associated course
Universal Design Living Laboratory	15	CSM 5670
Olentangy Environmental Control Center	15	CSM 5670
Franklin Courthouse Building	17	CSM 5670
Cunz Hall	35	CSM 5670
Universal Design Living Laboratory	35	CSM 5670
Grange Insurance Audubon Center	22	CSM 5670
Suburban Steel Supply Co.	20	CSM 3545
LA Fitness Project	20	CSM 3545
Hampton Inn	20	CSM 3545
Ohio State Fairgrounds	20	CSM 3546
4 Story Office Building, Polaris	20	CSM 3546
Yankee Bros. Renovations	10	CSM 5680
North Campus Student Housing	10	CSM 5680
Columbus Water Treatment Plant	35	CSM 2345
OSU Schottenstein Center	36	CSM 2345
Bexley Police Building	37	CSM 4900
OSU Medical Center Loading Dock Renovation	12	CSM 5680
Morehouse Parking Garage Demo	10	CSM 5680
Ag Admin Bldg Library Reno	10	CSM 5680

3. List the guest lecturers for the past year. Include the lecturer's name, topic, date, and course of meeting.

Lecturer	Topic	Date	Course
Josh Roehm	Green commissioning	Mar. 20, 2013	CSM 5670
Megan Welsh	Green roof	Sept. 9, 2013	CSM 5670
Donn Young	Green commissioning	Mar. 05, 2014	CSM 5670
Aparna Dial	Building energy efficiency at Ohio State	Apr. 21, 2014	CSM 5670
Nigel Carter	Construction risk management	Feb. 28, 2013	CSM 4641
Nigel Carter	Construction risk management	Oct. 08, 2013	CSM 4641
Layne Wortman	Safety in demolition	Feb. 13, 2014	CSM 5680
Jeff Schoener	Insurance and bonding	Feb. 6, 2014	CSM 4900
Lisa Wright	Contractor information reporting	Jan. 30, 2014	CSM 4900
Doug Shevelow	Documentation and record keeping	Mar. 20, 2014	CSM 4900

VIII. PUBLISHED INFORMATION TO THE PUBLIC

A. Selected Material

The majority of material provided to the public regarding the Construction Systems Management program at Ohio State University is published online and as brochures. The information in the brochure is also available on the department's website at <http://fabe.osu.edu>. Samples of the brochure will also be available during site visits.

B. Method of Material Selection

The department's Academic Program Coordinator in consultation with CSM faculty and teaching staff, the departmental Chair of Academic Affairs, and the college's Associate Dean of Academic Affairs determine the information to be distributed to the public.

C. Methods of Distributing

The department's brochure and webpage on the CSM program is revised and published regularly to ensure that information about the curriculum and program offerings is up to date.

IX. QUALITY IMPROVEMENT PLAN

A. Strategic Plan

1. Provide a copy of the construction educational (degree) program's strategic plan.

The CSM program's strategic plan consists of the following items:

- The first priority for the Construction Systems Management program is ACCE accreditation of the undergraduate degree program.
- CSM at The Ohio State University had 2+2 plans with Agricultural Technical Institute (ATI) and Columbus State Community College (CSCC) during the quarter system. With quarter to semester conversion (Summer 2012), a new articulation agreement for the 2+2 program was established between OSU and ATI. Meetings between OSU and CSCC are continuing on a revised 2+2 program. Until then, CSCC transfer students are handled on a case-by-case basis.
- Plans are being finalized for a CSM+Architecture double major degree curriculum which will provide students from either major an opportunity to obtain a double major from two programs in five years.
- With the new recruitment coordinator in place in the Department, one of the priorities will be increasing student numbers in the program. The majority of CSM students are transfer students from the other programs within OSU. However, moving forward our focus will be on attracting first year students to the program.
- CSM continuous program evaluation is a high priority at OSU and as such we have implemented assessment plans consistent with university requirements, and in addition we have implemented student exit surveys. We also started collecting evaluation forms from both students and supervisors about the internship experiences of students and about the training and education students received from supervisors, respectively. We plan to improve these surveys through electronic offerings, and then will begin using this feedback to improve our courses. Currently, the CSM program does not have an alumni survey. Historically, we relied on feedback from CSM Advisory Board. Together with the College of Food Agricultural and Environmental Sciences we plan to start Alumni Surveys next year. These surveys will be administered every other year.
- Discussions are continuing within the Academic Affairs Committee and Instructors to increase the math requirements from College Algebra (MATH 1148) to Pre-Calculus (MATH 1150).

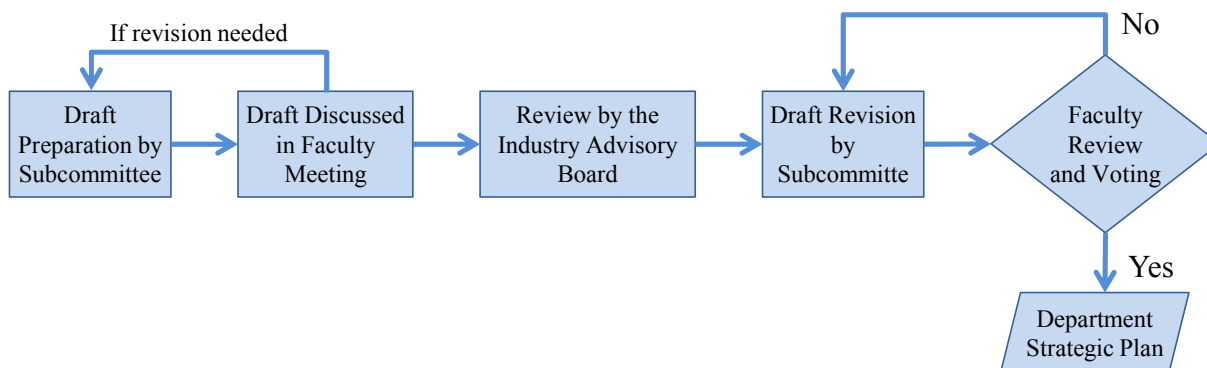
2. Describe the process used by the construction unit to ensure that the educational (degree) program has adequate resources to achieve its mission.

Ohio State University adopted Responsibility-Based Budgeting (RBB) a number of years ago. In addition the Board of Regents (controlling body of Ohio state universities and colleges) and the Ohio Legislature provide a tuition subsidy based on student credit hours taught. At the university-level state subsidy and tuition funds are distributed to colleges based on a formula that considers the level and nature of courses taught in addition student credit hours. Within the CFAES the tuition and state subsidy funds are distributed to academic units using an allocation scheme that considers academic unit performance in addition to the previously identified factors. Within FABE these funds are used to pay the salaries of wages of faculty, staff

and graduate TA's who are involved attracting, advising and delivering instruction to undergraduate and graduate students enrolled in academic programs housed within the unit. Students also pay a Learning Technology Fee that comes back to the academic unit in the form of support for computing hardware and software, and other technologies (GPS surveying equipment, electrical/electronic teaching lab equipment, etc.). Every effort is made to balance the distribution of funds between academic programs within the unit, and when possible through the multiple use of existing resources (teaching and computer lab resources).

3. Describe the involvement of all constituencies (faculty, students, staff, alumni, industry advisory board, and employers of graduates) in the development of the construction educational unit's strategic plan.

In every five years, the FABE Department reviews and revises its strategic plan by following the procedures shown below:



In the beginning of the process, the subcommittees (representing different specialty areas within the Department) review and revise the respective areas of the previous FABE Strategic Plan. They assess which goals we are meeting or exceeding; goals where progress is slow and if these remain valid and attainable; and new and emerging items of concern that will shape program direction and require new goals. The subcommittees are required to be specific when highlighting new or revising goals and be certain to identify appropriate metrics to assess program progress. Also, they are required to estimate the resources and timing required for the programs to meet revised or new program goals. The draft of the new Strategic Plan is then discussed at the monthly Faculty Meeting for feedback. The subcommittees will revise the Strategic Plan if needed.

The prepared Strategic Plan is then reviewed by the Department's Industry Advisory Board during their regular meeting. This board includes industry representatives, alumni, and student representatives from our undergraduate programs. The comments collected are provided to subcommittees to make revisions. The revised Strategic Plan will be presented to the Faculty Meeting for review and voting. The revision by subcommittees is performed if further changes need to be made for the Strategic Plan to be approved by the Faculty.

After the Department's Strategic Plan is approved, the Construction subcommittee starts to work on a more specific Strategic Plan for the CSM program. This plan goes through the same procedures shown above. However, it is reviewed by the CSM program's Industry Advisory Board instead of the Department's. This will make sure that the program's Strategic Plan is relevant to and meets the present needs of the construction industry and employers of our CSM graduates.

B. Assessment Plan

1. Provide a copy of the construction educational (degree) program's assessment plan that at a minimum includes:

- a. **Mission Statement of the Construction Educational (Degree) Program;**
- b. **Educational (Degree) Program Objectives of the Construction Educational Program;**
- c. **Learning Outcomes of the Construction Educational Program;**
- d. **Performance Criteria to Measure the Achievement of the Outcomes/Objectives;**
- e. **Description of assessment tools and assessment findings are used to measure achievement of the Construction Educational Program Educational Objectives and Learning Outcomes.**
- f. **Description of each assessment tool and how the data collected is used to measure achievement of the Construction Educational Program Educational Objectives and Learning Outcomes.**

A copy of our assessment plan can be seen in **Appendix N, Pages 159-185**. Assessment plan is constructed based on the goals of the program. For each goal, 3-5 outcomes are defined. Then for each outcome 1-4 measures and minimum and excellence criteria are defined. The program started the assessment plan in 2012-13 academic year after quarter-to-semester conversion. First two years, program will go through a revision cycle for refining the measures. Then, this program will go through a comprehensive outcomes assessment review every six years.

- 2. **Provide a glossary of compatible terminology used in the Assessment Plan if the terminology varies from these standards due to institutional constraints.**

Not applicable.

C. **Assessment Implementation Plan**

- 1. **Provide the construction educational (degree) program's schedule for planning and assessment.**

With the goal of improving learning, instruction, and curriculum, indicators from a summary report of the outcomes will be used to plan the incorporation of needed modifications. This evaluation process is established within the Ohio State University system. Accumulated findings for all program goals based on the contributing outcomes will be used as the cornerstone in the programmatic review cycle within the university (every sixth year). Providing essential information for making strategic adjustments to the CSM program, will assure continuous quality improvement.

Within the CSM program, we collect the annual data during spring semester from the selected courses. Based on the annual data, we either implement changes to particular courses or to the program or we reevaluate and refine the measures.

- 2. **Provide results of the latest assessment cycle which includes:**

- a. **A description of the data collected during the most recent assessment cycle;**

The most recent assessment conducted by the end of Spring 2014 was our second assessment that followed the newly developed assessment plan. We picked six measures from four courses to evaluate three selected learning outcomes under program goals 1, 2 and 3, respectively.

The data collected includes:

- *Outcome 1.1 Develop a management plan for the construction of buildings and other infrastructure, which includes all associated systems:*
 - Measure 1.1.1 Student grades for CSM 4900 Final project on estimating and scheduling to assess.

- *Outcome 2.1 Apply knowledge of business and ethical practices to aspects of construction business.*
 - Measure 2.1.1 Student grades for CSM 4641 Project management planning group work to assess.
- *Outcome 3.2 Communicate effectively in both written and oral contents.*
 - Measure 3.2.1 Student grades for CSM 4605 Communication skills exhibited via final group presentation.
 - Measure 3.2.2 Student grades for CSM 4605 Project report on final group presentation.
 - Measure 3.2.3 Student grades for CSM 3191 Internship final oral report, and
 - Measure 3.2.4 Student grades for CSM 3191 Internship final written report to assess

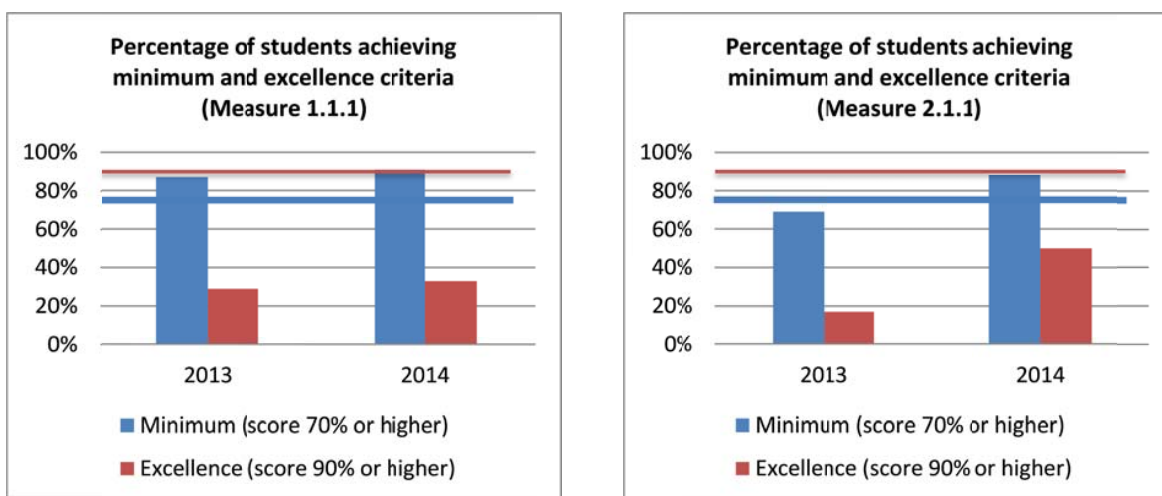
Please see **Appendix O, Page 187** for the data collected and the format. Every fall semester, we refine the measures based on the data collected the previous year.

b. An evaluation of the Educational (degree) Program Objectives and Learning Outcomes assessment data compared to stated Performance Criteria;

For these six measures, Performance Criterion A was applied in the assessment of learning outcomes. It is defined as *“The minimal acceptable criterion for this outcome is 75% of students scoring 70% or higher on the identified assessment tasks for the measurement of achievement for this outcome. When 90% of the students obtain scores of 90% or higher on the selected assessment associated assignments, the performance standard constituting programmatic excellence for this learning outcome will be attained.”*

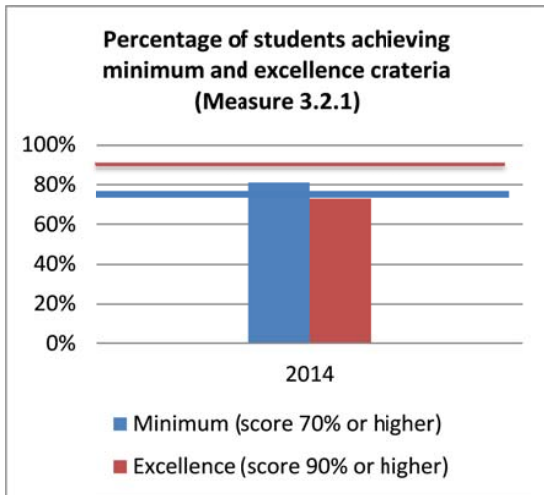
The evaluation results are shown in Fig. 38. The results from the previous assessment cycle if available are also displayed for comparison.

Fig. 38: Evaluation Results for Meeting Learning Outcomes (2013 and 2014)

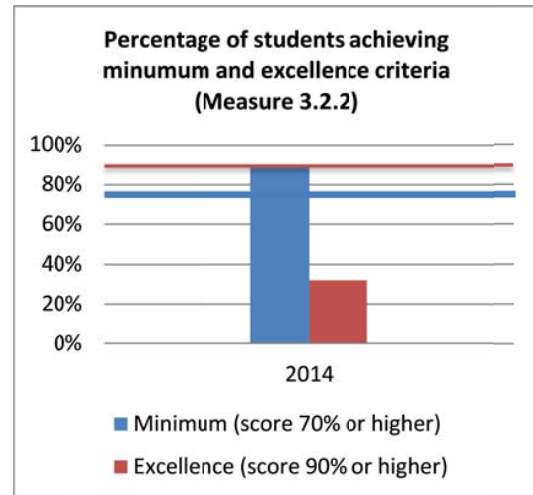


For Outcome 1.1: Met Minimum Criterion but not Excellence (2014)

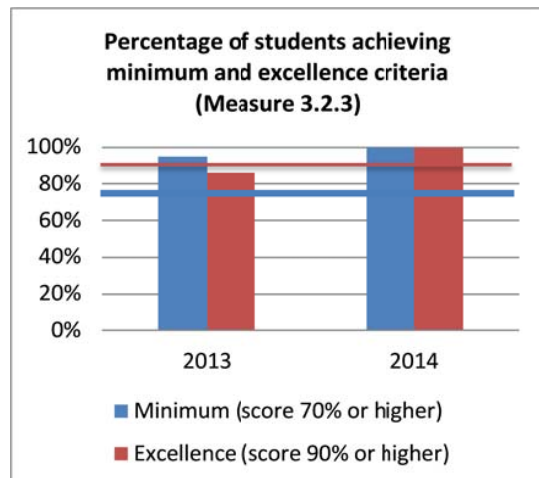
For Outcome 2.1: Met Minimum Criterion but not Excellence (2014)



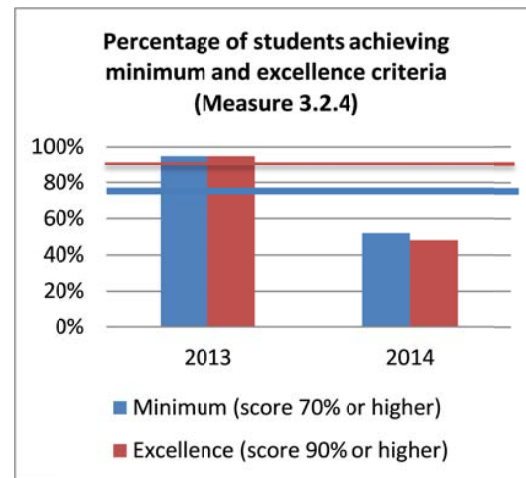
For Outcome 3.2: Met Minimum Criterion but not Excellence (2014)



For Outcome 3.2: Met Minimum Criterion but not Excellence (2014)



For Outcome 3.2: Met both Minimum and Excellence Criteria (2014)



For Outcome 3.2: Not meet both Minimum and Excellence Criteria (2014)

c. Action plans for areas needing improvement; and

The Capstone class, CSM 4900, was created to simulate a project, i.e. the students are asked to form a small construction firm, obtain permission to be placed on a bidders list, execute a full estimate, create a contract, schedule of values, a full CPM schedule, execute a change order and finally close out documents. After a year of providing this class the following modifications were made: a 2nd pay application exercise was added; a cost code example and exercise was added; the schedule exercise was modified to not only include the Gantt chart, but also a logic diagram is now being submitted; a local attorney is now scheduled to speak on the importance of proper and timely documentation. We will continue to monitor this class as well as feedback from graduates and employers to institute further improvements. We observed a slight increase both in minimum and excellence criteria from 2013 to 2014 offering.

Regarding the Internship class, CSM 3191, each student is required to obtain an internship and work a minimum of 400 hours in a capacity that is commensurate with their respective interest upon graduation. We have not received as much feedback as we would like from our internship employers, so we are working on an “on-line” reporting/survey system for them to easily provide information regarding the intern and what he or she does well and what might need some improvement. The selected survey platform will be Qualtrics which we use to administer senior exit survey.

To improve students’ ability to apply knowledge of business and ethical practices to aspects of construction management, we added two case studies related to construction management and professional ethics into CSM 4641 Construction Project Management in Au 2013 and Sp 2014. We also plan to continuously incorporate emerging topics from the construction industry to reflect today’s construction management practices and technology advancements.

d. Results of implementation for improvement including any revisions to the educational (degree) program’s assessment plan along with any reassessments and action plans.

Since the assessment plan is still a work-in-progress, the changes observed are not significant. However, we will closely monitor the assessment process, refine our measures, and reevaluate the outcomes. Action plans for improving courses and program will be developed and implemented accordingly.

D. Actions to Address Prior Weaknesses (For Renewal of Accreditation Studies only)

Not applicable.

Volume II

X. APPENDICES

B. Course Outlines

Standard Course Syllabus

Construction Systems Management

1205 Introduction to Construction Management

Official Course Description

Overview of the construction industry and the role of the construction manager. Introduction to construction means and methods, scheduling, estimating, safety and ethics in construction.

<u>Quarters of Offering</u>	<u>Credits</u>	<u>Level</u>	<u>Class Meeting Pattern</u>	<u>Course Supervisor</u>
Au, Sp	3	U	2 – 1.5 hr cl	Doug Cooper

Course Prerequisites

Prereq or concur: Math 1148 (148), 1149, 1150 (150), or 1151.01 (151). Not open to students with credit for ConSysMt 205.

ACCE Essential Elements of Instruction

Communication (1.1), Ethics (1.2), Structural (4.24), Composition and Properties (4.31), Terminology & Units of Measure (4.32), Standard designations, sizes, and graduations (4.33), Conformance references and testing techniques (4.34), Products, systems, and interface issues (4.35), Building codes and standards (4.39), Basic sketching and drawing techniques (4.41), graphic vocabulary (4.42), Detail hierarchies, scale, content (4.43), Notes and specifications, reference conventions (4.44), Computer applications (4.45), Survey, layout, and alignment control (4.51), Site organization and development (4.52), Types of estimates and uses (5.11), Quantity takeoff (5.12), Labor and equipment productivity factors (5.13), Pricing and price data bases (5.14), Job direct and indirect costs (5.15), Bid preparations and bid submission (5.16), Computer applications (5.17), Parameters affecting project planning (5.21), Schedule information presentation (5.22), Network diagramming and calculations with CPM (5.23), Resource allocation management (5.24), Impact of changes (5.25), Computer applications (5.26), Cost accounting and industry formats (5.31), Fixed and variable costs; insurance, bonding, marketing, general and administrative expenses (5.32), Bidding and procurement practices (5.33), Record and report practices (5.34), Capital equipment, depreciation, and expensing (5.35), Forecasting costs, cash flow requirements (5.36), Payment processes and time value of money (5.37), Construction contracts, roles & responsibilities of parties (5.41), Administrative procedures to avoid disputes (5.45), Safe practices (5.51), Mandatory procedures, training, records, and maintenances (5.52), Compliance, inspection, and penalties (5.53), Concepts, roles, and responsibilities (5.61), Labor relations (5.62), Administrative systems and procedures (5.63), Cost control data and procedures (5.64), Documentation at job site and office (5.65), Quality control philosophies and techniques (5.66), Computer applications (5.67)

Text(s)

Pearson's Pocket Guide to Construction Management, Steven Peterson, ISBN-10: 0-13-215610-5

Course Objectives

On completion of the course, the student will be able to:

- Understand the basic relationships in the construction industry
- Understand Basic Construction Math and the basics of quantity take off and estimating
- Understand a basic set of construction drawings.
- Learn basic construction scheduling techniques.
- Appreciate and develop construction communications.
- Understand the basics of construction productivity
- Develop an understanding for construction materials and building components.
- Learn the basics of construction safety and quality control

Topics

- Construction relationships
- Drawings, Specifications, Contracts
- Estimating
- Types of construction/methods

- Scheduling
- Accounting
- Productivity
- Safety
- Quality Control

Instructional Methods

Lecture, on line reading, homework

Assessments

Homework Assignments and Class Participation	25 %
In class assignments and quizzes	25%
Midterm Exams (2)	25%
Final Exam	<u>25%</u>
	100%

Grading Scale:

93% = A	90% = A-	
87% = B+	83% = B	80% = B-
77% = C+	73% = C	70% = C-
67% = D+	60% = D	

Prepared by

DC

Date

3/4/2014

Standard Course Syllabus

Construction Systems Management

2240 Construction Materials and Methods I

Official Course Description

A study of the principles and practices in basic metal fabrication using the current metallurgical and welding processes required in the agricultural industry.

<u>Semester of Offering</u>	<u>Credits</u>	<u>Level</u>	<u>Class Meeting Pattern</u>	<u>Course Instructor</u>
Au, Sp	3	U	2 – 1 hr cl, 2 - 2 hr labs	Larry C. Heckendorn

Course Prerequisites

FAES 1100 (100) or Engr 1100 (Engineer 100, or equiv university survey course. Not open to students with credit for ConSysMt 240 or AgSysMt 2240 (AgSysMgt 240).

ACCE Essential Elements of Instruction

Composition and properties (4.31), Terminology & units of measure (4.32), Standard designations, sizes, and graduations (4.33), Conformance references and testing techniques (4.34), Products, systems and interface issues (4.35), Equipment applications and utilization (4.36), Assembly techniques & equipment selection (4.38), Building codes and standards (4.39), Notes and specifications, reference conventions (4.44), Safe practices (5.51), Quality control philosophies and techniques (5.66)

Texts

Required Texts:

1. The Procedure Hand Book, 14th Ed., The James F. Lincoln Arc Welding Foundation, Cleveland, OH, 2000.
2. AGSYSMT/CONSYSMT 240 Course Bundle, Uniprint, Aut '12, University Book Stores
3. Arcs & Sparks, 4H Welding Series, Ohio State University Extension, 2002

Optional Texts:

1. H.B. Cary, Modern Welding Technology, 3rd Ed., Prentice Hall Inc., Englewood Cliffs, NJ, 1994.
2. L. Koelhoff, A. F. Manz and E.G. Hornberger, Welding Processes and Practices, John Wiley and Sons, New York, NY 1988
3. Principles of Industrial Welding, The James F. Lincoln Arc Welding Foundation, Cleveland, OH, 1978.

Course Objectives

On completion of the course, the student will be able to:

- Demonstrate safety skills related to metal fabrication in the construction industry
- Understand basic theories and application of steel metallurgy used in fabrication – forming and welding
- Understand basic principles of heat treating of steel and applications
- Understand basic design concepts utilized in bolted and welded joints
- Understand how drawing symbols (especially welding symbols) and standards for quality (e.g. welding) are used in metal fabrication
- Principles and practices of Oxyacetylene Welding (OAW)
- Principles and practices of Oxyacetylene Cutting (OAC)
- Principles and practices of Shielded Metal Arc Welding (SMAW) and Flux Cored Arc Welding (FCAW-G/GM & -S)
- Understand the steps to develop a basic cost estimate (e.g. filler material) and a scheduling analysis for making a weldment and demonstrate the ability by making several estimates and analysis
- Principles and practices of NDE (nondestructive examination)
- Fabrication and erection of the steel frame of a single story, 6 bay steel building.

Topics

- Fundamentals of Fabrication Safety
- Survey of Metalworking
- Material Properties of Common Ferrous and Non-ferrous metals

- Material Properties Testing
- Crystal Structure and Solidification
- Iron Carbon Phase Diagram
- Heat Treatment of Steels – Annealing & Normalizing
- Heat Treatment of Steels – Hardening
- Welding Metallurgy
- Metal Classification and Identification Making of Steel
- Oxygen Fuel Welding – OFW
- Oxygen Fuel Brazing – OFB
- Oxygen Fuel Soldering – OFS
- Oxygen Fuel Cutting
- Power Sources and Equipment
- Metal Transfer
- Shielded Metal Arc Welding
- Welding Symbols
- Welding Procedures
- Design of Welded Joints
- Gas Metal Arc Welding – GMAW & Flux Cored Arc Welding – FCAW
- Gas Tungsten Arc Welding – GTAW & Plasma Arc Cutting – PAC
- Problems in Welding and Cutting
- Inspecting for Quality Welding
- Resistance Welding – RSW, RSEW & RPW

Instructional Methods

This course is mainly delivered by lectures and labs.

Assessments

A. Lecture Examinations:	Midterm	= 100 Points
	Final	= 100 Points
B. Lecture Homework & Quizzes		= 50 Points
C. Laboratory Projects & Lab Quizzes		= 150 Points, 100 Points needed to pass Lab
	Total	= 400 Points

Grading Scale:

350 points and up = A	335-349 points = A-	
320-334 points = B+	305-319 points = B	290-304 points = B-
275-289 points = C+	260-274 points = C	245-259 points = C-
230-244 points = D+	215-229 points = D	214 points and below = E

Prepared by

VC

Date

2/2014

Standard Course Syllabus

Construction Systems Management

2241 Building Materials and Construction II

Official Course Description

Material selection and construction methods for residential and commercial construction with an emphasis on wood, masonry, and concrete.

<u>Semester of Offering</u>	<u>Credits</u>	<u>Level</u>	<u>Class Meeting Pattern</u>	<u>Course Supervisor</u>
Au, Sp	3	U	2 – 1 hr cl, 1- 2.75 hr lab	Dennis Albery

Course Prerequisites

Prereq or concur: ConSysMt 1205 (ConSysMt 205). Not open to students with credit for ConSysMt 241 or AgSysMgt 241.

ACCE Essential Elements of Instruction

Composition and properties (4.31), Terminology & units of measure (4.32), Standard designations, sizes, and graduations (4.33), Conformance references and testing techniques (4.34), Comparative cost analysis (4.37), Assembly techniques & equipment selection (4.38), Building Codes and Standards (4.39), Graphic vocabulary (4.42), Types of estimates and uses (5.11), Quantity takeoff (5.12), Pricing and price data bases (5.14), Safe practices (5.51).

Text(s)

Residential Framing: Spence, ISBN: 978-0-8069-8594-7
The Contractor's Guide to Quality Concrete Construction 3rd Edition

Course Objectives

Upon successful completion of this course the student will be able to:

- Identify components of concrete, masonry and wood structures
- Understand the elements for reading construction prints
- Estimate quantities from prints for construction projects
- Understand order of construction practices
- Perform test for quality concrete
- Design structural elements using accepted practices
- Prepare a concrete report derived from concrete test specimens

Topics

- Concrete mixes
- Concrete testing
- Concrete foundations
- Concrete formwork
- Concrete reinforcement
- Concrete placement, finishing, curing
- Wood framing systems
- Selecting wood members from tables
- Construction safety

Instructional Methods

Two lectures per week with one two hour 45 minute lab that is used for construction of small structure from footing to roof.

Assessments (Point System)

Attendance

Lab Projects
Quizzes and Homework
Concrete Midterm
Wood Midterm
Concrete Report
Final Exam

Grading Scale:

93% = A	90% = A-	
87% = B+	83% = B	80% = B-
77% = C+	73% = C	70% = C-
67% = D+	60% = D	

Prepared by

DWA

Date

3/05/2014

Standard Course Syllabus

Construction Systems Management

2305 Professional Development I

Official Course Description

Business communications and professional development in construction systems management including informative and persuasive writing, academic planning, project management, research techniques, teaming, report writing and presentations.

<u>Semesters of Offering</u>	<u>Credits</u>	<u>Level</u>	<u>Class Meeting Pattern</u>	<u>Course Instructor</u>
Au, Sp	2	U	2 – 1 hr cl	Britt

Course Prerequisites

Prereq: English 1110 (110). Not open to students with credit for ConSysMt 305 or AgSysMt 2305 (AgSysMgt 305).

ACCE Essential Elements of Instruction

Communication (1.1), Ethics (1.2), Documentation at Job Site and Office (5.65)

Text(s)

Locker, K.O. (2013). Business and Administrative Communication 10th hardback edition. New York: McGraw-Hill Higher Education.

Course Objectives

Upon successful completion of this course the student will be able to:

1. Construct a resume and application letter focused for his/her field, listing employment and life experiences.
2. Use the CFAES online jobs database (hireabuckeye) and other electronic job search sources.
3. Represent him/herself professionally using effective job interviewing techniques.
4. Conduct company research to develop knowledge about companies of interest.
5. Revise his/her digital identity to represent his/her professional skills and talents.
6. Use professional development opportunities to strengthen his/her knowledge, skills, and qualifications.
7. Write informative and persuasive documents for target audiences.
8. Deliver negative messages that maintain as much goodwill as possible.
9. Improve writing skills in Standard Edited American English.
10. Work effectively in a team situation and evaluate that experience.
11. Plan, design, and deliver effective presentations.

Topics

- Standards for professional email
- Five criteria for effective business communication
- Understanding audience and building goodwill
- Salutations, greetings, and titles
- Personal writing assessment
- Daily reports and meeting minutes
- Program internship requirement, networking, and job searches
- Resumes, cover letters, and job candidate correspondence
- Job interviewing: appropriate attire, preparation, and practice through mock interviews
- Social media in a professional context
- Photo shoot for professional headshot
- Persuasive message techniques
- Negative message letter
- Industry guest speakers
- Networking with upperclassmen

- Researching industry news, events, and subject areas
- Presentation skills

Instructional Methods

Instruction is delivered through in-class discussions and lectures, video presentations, and in-class work. The LMS is used to present, organize, and store all course information including the course schedule, assignments, and updates or changes.

Assessments

Chapter Review Quizzes	15%
Job Search Assignments	25%
Business Writing Assignments	25%
Team Project	15%
Attendance and in-class work	20%

Grading Scale

Letter grades are calculated based on the standard OSU grading scheme:

93 - 100 (A)	87 - 89.9 (B+)	77 - 79.9 (C+),	67 - 69.9 (D+)
90 - 92.9 (A-)	83 - 86.9 (B)	73 - 76.9 (C),	60 - 66.9 (D)
	80 - 82.9 (B-)	70 - 72.9 (C-)	Below 60 (E)

Prepared by

AB

Date

3/2014

Standard Course Syllabus

Construction Systems Management

2310 Electric and Lighting Systems for Buildings

Official Course Description

Concepts of electricity and illumination applied to the design and installation of electrical and lighting systems in buildings including safety, code requirements, installation methods, electrical schematics, and construction blueprints.

<u>Quarters of Offering</u>	<u>Credits</u>	<u>Level</u>	<u>Class Meeting Pattern</u>	<u>Course Supervisor</u>
Au, Sp,	3	U	2 – 1 hr cl, 1 - 2.75 hr lab	Dennis Albery

Course Prerequisites

Prereq: Physics 1200 (111) or 1250 (131). Not open to students with credit for ConSysMt 310.
Permission of Instructor

ACCE Essential Elements of Instruction

Electrical (4.22), Terminology & units of measure (4.32), Building codes and standards (4.39), Graphic vocabulary (4.42), Type of estimates and uses (5.11), Quantity takeoff (5.12), Pricing and price data bases (5.14), Safe practices (5.51).

Text(s)

Mechanical and Electrical Systems in Architecture, Engineering and Construction by Joseph B. Wujek and Frank R. Dagostino, 5th Edition, ISBN: 978-0-13-500004-5 or 0-13-500004-1

Course Packet

Course Objectives

Upon completion of CSM 2310, the student should be able to:

- Understand purpose of series and parallel circuits
- Understand laws governing electricity
- Calculate components for electric circuits
- Read electrical prints
- Estimate electrical components from prints
- Understand the use of the National Electric Code

Topics

- Ohm's law
- Series and Parallel circuits
- RLC circuits
- Follow the codes set forth by the NEC
- Electrical print reading
- Estimate electrical components from prints
- Hands on wiring of electric circuits
- Light levels and standards

Instructional Methods

Two one hour lectures and one two hour forty-five minute lab per week

Assessments (Point System)

Attendance and class participation
Quizzes
Homework

Laboratory Projects and Exercises
Midterms (2)
Final

Grading Scale:

93% = A	90% = A-	
87% = B+	83% = B	80% = B-
77% = C+	73% = C	70% = C-
67% = D+	60% = D	

Prepared by

DWA

Date

3/5/2014

Standard Course Syllabus

Construction Systems Management

2345 Mechanical Systems for Buildings

Official Course Description

Fundamentals of HVAC, plumbing, lighting, fire protection and noise and vibration control and their impact on building design and construction.

<u>Quarters of Offering</u>	<u>Credits</u>	<u>Level</u>	<u>Class Meeting Pattern</u>	<u>Course Instructor</u>
Autumn & Spring	4	U	2 – 1 hr cl, and 1 – 2 hr lab	Ware

Course Prerequisites

Physics 1200 or 1250

ACCE Essential Elements of Instruction

Ethics (1.2); Design Theory (4.1); Analysis and Design of Construction Systems Mechanical (4.23); Analysis and Design of Construction Systems Structural (4.24); Composition and Properties (4.31); Terminology & Units of Measure (4.32); Standard Designations, Sizes and Graduations (4.33); Products, Systems and Interface Issues (4.35); Equipment Applications and Utilization (4.36); Comparative Cost Analysis (4.37); Building Codes and Standards (4.39); Basic Sketching and Drawing Techniques ((4.41); Graphic Vocabulary (4.42); Detail Hierarchies, Scale & Content (4.43); Types of Estimates and Users (5.11); Quantity Takeoff (5.12); Labor and Equipment Productivity Factors (5.13); Pricing and Price Databases (5.14); Computer Applications (5.26); Cost Accounting and Industry Formats (5.31); Labor Relations (5.62).

Text(s)

Benjamin Stein, 1997. Building Technology, Mechanical and Electrical Systems 2nd Edition. John Wiley & Sons, Inc. New York. ISBN 0-471-59319-2

Course Objectives

This course is designed to develop the student's ability to:

- Develop an understanding of the basic concepts of the fluid mechanics including pressure, flow velocity, energy and friction head loss and the applications of these concepts to the operation of building HVAC and plumbing systems.
- Learn to define the properties of air-water vapor mixtures and be able to use the psychometric chart showing how various operations affect these properties.
- Develop knowledge of the basic concepts of heat and mass transfer and energy balances and the application of these concepts to controlling the temperature and humidity levels in buildings.
- Learn the major code provisions for HVAC, plumbing, noise and vibration control and the affect design and construction practices.
- Become familiar with the nomenclature and basic principles of operation of modern HVAC and plumbing systems.
- Become familiar with the procedures and techniques used in the installation and construction of the HVAC and plumbing systems.

Topics

- Overview of the need for creature comforts in modern buildings, such as heating, cooling, running water, waste disposal and safety features.
- Temperature measurements, both F° and C° and the use of the Psychometric Chart, including sensible and latent heat.
- "R" value and "U" factor study of individual and component building sections, including temperature profiles.
- Heat loss studies including infiltration and ventilation leading to sizing of heat plants.
- Heat gain studies including infiltration, ventilation and internal and latent heat gain leading to sizing of cooling equipment.
- Ductwork study and sizing based on heat loss and heat gain analysis.

- Lab session discussing the process of fitting ductwork above the ceilings in modern day buildings.
- Plumbing study starting with fluid pressure and potential drop through plumbing lines.
- Study of the “water supply fixture units” and “drain fixture units” providing method to size plumbing and drain lines in a modern building.
- Fire sprinkler lecture, various types of sprinkler systems and codes governing those processes.
- Life/Safety lectures and how the codes impact the mechanical systems process.

Instructional Methods

This course consists of two 50 minute lectures and a one hour fifty minute lab section. The lab sections are held to a maximum of twenty students to allow small class instruction.

Assessments

Laboratory Reports	15%
Homework	15%
Quizzes	15%
Team Project	15%
Attendance	10%
Midterms & Final Exam	30%

Grading Scale:

93% = A	90% = A-	
87% = B+	83% = B	80% = B-
77% = C+	73% = C	70% = C-
67% = D+	60% = D	

Prepared by

WMW

Date

3/2014

Standard Course Syllabus

Construction Systems Management

2440 Construction Surveying and Site Development

Official Course Description

Principles of soil mechanics, erosion control, layout, and surveying as applied to site development for residential and commercial construction.

<u>Semester of Offering</u>	<u>Credits</u>	<u>Level</u>	<u>Class Meeting Pattern</u>	<u>Course Instructor</u>
Au, Sp	4	U	2 – 1.5 hr cl & 1 – 3 hr lab	E. Desmond

Course Prerequisites

CSE 1112 (105) or HCS 2401, and EnGraph 1121 (121) or Engr 1181.01 (181). Concur: ConSysM 2241 (ConSysMt 241) and ENR 3000 (300.01). Not open to students with credit for ConSysMt 440. This course is available for EM credit.

ACCE Essential Elements of Instruction

Communication (1.1), Ethics (1.2), Analytic geometry (2.21), Pre-calculus (2.21), Other sciences (2.21), Computer science (2.21), Soil mechanics (4.11), Civil (4.21), Terminology & units of measure (4.32), Standard designations, sizes, and graduations (4.33), Equipment applications and utilization (4.36), Basic sketching and drawing techniques (4.41), Computer applications (4.45), Quantity takeoff (5.12), Safe practices (5.51)

Texts

Required course packet sold at OSU Bookstore.

Construction Surveying and layout, Third Edition, Wesley Crawford.

Soils in Construction, 5th Edition, W. L. Schroeder, S. E. Dickenson, and D. C. Warrington.

Course Objectives

On completion of the course, the student will be able to:

- Gain an understanding of construction site changes that occur as the process evolves and how site characteristics and management may impact the outcome, positively or negatively and both locally and to the wider community
- Examine environmental, economic, and social impacts of site development, and understand how these impacts can be influenced
- Learn to work together in small teams to solve real world problems through surveying, design and layout
- Prepare a written technical report which involves an evaluation of collected survey data, computer aided layout design, and subsequent survey layout

Topics

- Mechanisms of construction site soil erosion, soil erosion prevention, and sediment control
- Regulations of soil erosion prevention BMPs for construction sites
- Engineering properties of soils
- The creation and reading of maps and construction site plans
- Basic surveying experience, including the use of Automatic Levels, Laser Levels, Total Stations, and GPS equipment
- Surveying data collection, data manipulation, and layout
- Computer Aided Design for construction site layouts

Instructional Methods

This course is delivered by lectures and labs.

Assessments

Attendance and participation	10%
------------------------------	-----

Homework, In-class assignments and quizzes	20%
Laboratory reports	30%
Midterm	20%
Final Exam	20%
Total	100%

Grading Scale:

93% = A	90% = A-	
87% = B+	83% = B	80% = B-
77% = C+	73% = C	70% = C-
67% = D+	60% = D	

Prepared by

QC

Date

04/2014

Standard Course Syllabus

Construction Systems Management

3191 Internship in Construction Systems Management

Official Course Description

A pre-approved internship of planned and supervised work experiences which provide professional and technical growth in the construction industry.

<u>Quarters of Offering</u>	<u>Credits</u>	<u>Level</u>	<u>Class Meeting Pattern</u>	<u>Course Instructor</u>
Au, Sp & Su	2	U	N/A	Ware

Course Prerequisites

CSM 2305 and 8 credit hours in ConSysM courses. Not open to students with credit for 2305. This course is available for EM credit.

ACCE Essential Elements of Instruction

Estimating (5.1); Planning and Scheduling (5.2); Construction Law (5.4); Safety (5.5); Project Management (5.6).

Text(s)

N/A

Course Objectives

This course (experience) is designed to develop the student's ability to:

- Obtain real construction world experience.
- To obtain a favorable report from the evaluation form from the employer at the end of the experience.
- The student is also graded on the quality of the internship, prompting them to seek out work that will benefit them upon graduation.

Topics

- Each student creates a "Proposal" to be submitted and approved by the Internship Coordinator.
- Once that Proposal is accepted, the student reviews that proposal with the prospective employer.
- During the internship, the student is required to submit periodic reports or if the student is not entered into CSM 3191 at that time, he or she maintains a journal for future reference.
- Each student then participates in a presentation to under classmen to share the experience and advise the underclass men how to obtain and execute the internship.
- A final report is due at the end of the semester.

Instructional Methods

This course does not have scheduled class sessions, all of the work is submitted to the Carmen DropBox.

Assessments

Internship Proposal	10%
Periodic Reports	10%
Final Report	30%
Internship Presentation	30%
Quality of the Internship	20%

Grading Scale:

93% = A	90% = A-	
87% = B+	83% = B	80% = B-
77% = C+	73% = C	70% = C-

67% = D+ 60% = D

Prepared by

WMW

Date

3/2014

Standard Course Syllabus

Construction Systems Management

3450 Construction Drawings and Estimating

Official Course Description

Reading and interpretation of construction drawings and specifications for construction projects. Estimating the material requirements and costs of building construction projects using commercially available estimating tools.

<u>Quarters of Offering</u>	<u>Credits</u>	<u>Level</u>	<u>Class Meeting Pattern</u>	<u>Course Supervisor</u>
Au, Sp	4	U	2 - 1.5 hr cl, 1 - 2.75 hr lab	Dennis Albery

Course Prerequisites

Prereq: ConSysM 2240 (ConSysMt 240), 2241 (241), 2310 (310), 2345 (345), Concurrent with 2440 (440), Engr 1121 (EnGraph121), and CSE 1112 (105). Not open to students with credit for ConSysMt 540. Permission of instructor.

ACCE Essential Elements of Instruction

Civil (4.21), Electrical (4.22), Mechanical (4.23), Structural (4.24), Composition and properties (4.31), Standard designations, sizes, and graduations (4.33), Equipment applications and utilization (4.36), Assembly techniques & equipment selection (4.38), Basic sketching and drawing techniques (4.41), Graphic vocabulary (4.42), Detail hierarchies, scale, content (4.43), Types of estimates and uses (5.11), Quantity takeoff (5.12), Labor and equipment productivity factors (5.13), Pricing and price data bases (5.14), Parameters affecting project planning (5.21), Record and report practices (5.34).

Text(s)

Pearson's Pocket Guide to Construction Management by Steven Peterson (ISBN: 978-0-13-215610-3)

RSMeans Building Construction Cost Data 2013 Book; RSMeans, 71th Edition, ISBN: 1936335565, ISBN13: 978-1-936335-56-5 or current Edition.

Course Objectives

Upon successful completion of this course the student will be able to:

- Read and understand prints
- Use prints for multiple takeoff methods
- Be familiar with MasterFormat Divisions
- Recognize order of construction for scheduling purposes
- Calculate installation times using labor hours
- Create spreadsheets for estimating
- Learn terminology related to construction
- Submit bid estimates for projects

Topics

- MasterFormat divisions
- Print reading from civil to finish
- Using spread sheets for estimating
- Using multiple methods for takeoffs
- Submitting bids
- Learn the use of change orders and request for information forms
- Importance of record keeping
- Importance of daily and weekly logs

Instructional Methods

Two one hour twenty minute lectures and one two hour forty-five minute lab per week.

Assessments (Point System)

Attendance
Lab projects and exercises
Quizzes and homework
Midterms (2)
Journal
Final Exam

Grading Scale:

93% = A	90% = A-	
87% = B+	83% = B	80% = B-
77% = C+	73% = C	70% = C-
67% = D+	60% = D	

Prepared by

DWA

Date

3/05/2014

Standard Course Syllabus

Construction Systems Management

3451 Scheduling

Official Course Description

Planning, scheduling and tracking of construction project elements including management of time, resources, cost and safety

<u>Semesters of Offering</u>	<u>Credits</u>	<u>Level</u>	<u>Class Meeting Pattern</u>	<u>Course Supervisor</u>
Au, Sp	4	U	2 – 1.5 hr cl, 1-3 hr lab	Suchy

Course Prerequisites

ConSysM 3450

ACCE Essential Elements of Instruction

Communication (1.1), Ethics (1.2), Terminology & units of measure (4.32), Standard designations, sizes, and graduations (4.33), Products, systems and interface issues (4.35), Equipment applications and utilization (4.36), Assembly techniques & equipment selection (4.38), Building codes and standards (4.39), Detail hierarchies, scale, content (4.43), Computer applications (4.45), Quantity takeoff (5.12), Labor and equipment productivity factors (5.13), Pricing and price data bases (5.14), Computer applications (5.17), Parameters affecting project planning (5.21), Schedule information presentation (5.22), Network diagramming and calculations with CPM (5.23), Resource allocation and management (5.24), Impact of changes (5.25), Computer applications (5.26), Forecasting costs, cash flow requirements (5.36), Mandatory procedures, training, records, and maintenance (5.52), Concepts, roles, and responsibilities (5.61), Cost control data and procedures (5.64), Documentation at job site and office (5.65), Computer applications (5.67)

Text(s)

Newitt, Jay S. *Construction Scheduling: Principles and Practices (2nd Edition)*. Pearson, 2009. ISBN: 978-0-13-513793-3

Course Objectives

Upon completing this course, the student will be able to:

- Create project task list and organize in work breakdown structure (WBS)...
- Assign activity relationships and determine: Early Start, late start, early finish, late finish, durations, float and critical activities...
- Create and update project schedules to accomplish project timeframe and budget objectives...
- Assign resources to tasks and cost to resources for schedule cost loading purposes...
- Generate professional project reports and present information related to labor, materials, equipment and cost...
- Demonstrate an understanding of building systems/components and their relationship to other components and the building as a whole...
- Use construction documents to develop scopes of work in preparation of bid packages, project schedules, estimates and project management...
- Understand and be able to make management decisions based on sound ethical standards...

Topics

- Computer scheduling
- Project management and objectives
- Reasons for creating formal schedules
- Time management and scheduling systems
- Creating and using bar charts
- Critical path method scheduling
- Creating and using network diagrams
- Calculating start and finish dates, critical path and total float

- Analyzing project and activity float values
- Creating and using lags and relationship (precedence)
- Reviewing, analyzing and adjusting schedules to meet project requirements
- Creating hand and computer generated reports
- Updating project schedules
- Forecasting and balancing project resources
- Alternative scheduling techniques
- Scope of work development
- Professional ethics

Instructional Methods

The delivery method for this course consists of lectures and laboratory practice.

Assessments

The **approximate** breakdown of grades will be as follows. Final breakdown may vary depending on assignments.

Attendance and class participation	10%
Laboratory projects and exercises	30%
Quizzes and Homework	30%
Midterm(s) and Final Project	30%

Grading Scale:

93% = A	90% = A-	
87% = B+	83% = B	80% = B-
77% = C+	73% = C	70% = C-
67% = D+	60% = D	

Prepared by

JTS

Date

4/2014

Standard Course Syllabus

Construction Systems Management

3545 Structures for Construction Managers I

Official Course Description

Principles of statics, material properties, structural analysis and design useful in understanding the design and managing of construction of steel and wood structures.

<u>Quarters of Offering</u>	<u>Credits</u>	<u>Level</u>	<u>Class Meeting Pattern</u>	<u>Course Supervisor</u>
Au, Sp	3	U	2 - 1.5 hr cl, 1 – 2 hr lab	Shepherd

Course Prerequisites

CSM 2240, 2241 and Physics 1200

ACCE Essential Elements of Instruction

Physics (2.11), Chemistry (2.11), Linear Algebra (2.21), Other Sciences (2.21zzz), Structural Mechanics (4.11), Soil mechanics (4.11), Civil (4.21), Structural (4.24), Composition and properties (4.31), Standard designations, sizes, and degradations (4.33), Products, systems, and interface issues (4.35), Building codes and standards (4.39), Graphic vocabulary (4.42), detail hierarchies, scale, content (4.43), Bid preparations and bid submission (5.16), Parameters affecting project planning (5.21), Impact of changes (5.25), Bidding and procurement practices (5.33), Construction contracts, roles & responsibilities of parties (5.41), The regulatory environment and licensing (5.42), Lien laws and the contractor's rights (5.43), Compliance, inspection, and penalties (5.53), Concepts, roles, and responsibilities (5.61), Labor relations (5.62), Administrative systems and procedures (5.63), Cost control data and procedures (5.64), Documentation at job site and office (5.65), Quality control philosophies and techniques (5.66).

Text(s)

1. Notes – Purchase at Barnes & Noble High St. location
2. Textbook – “Soils in Construction” 5th Edition Schroeder, Dickenson, Warrington

Course Objectives

The objectives of this course are for the students to:

- Understand the structural forces involved in the construction of buildings and bridges.
- Understand the properties of wood and the basic design principles used for wood design.
- Understand the design principles of various types of foundations and how they are used in the construction process.
- Increase their confidence in problem solving.
- Feel comfortable working with architects, engineers, and specialty contractors.

Topics

- Algebra
- Trig/Statics
- Beams
- Strength of material
- Compression members
- Tributary Area
- Lateral Loads
- Wood Spanning Elements
- Wood Connections
- Wood Trusses
- Truss Joist
- Simpson Strong Tie
- Foundations
- Building Design

- Formwork

Instructional Methods

This course is mainly delivered by lectures and labs.

Assessments

Exam #1	14%
Exam #2	14%
Exam #3	14%
Final Exam	26%
Homework	20%
CP's	2%
Lab	10%
Total	100%

Grading Scale:

93% = A	90% = A-	
87% = B+	83% = B	80% = B-
77% = C+	73% = C	70% = C-
67% = D+	60% = D	

Prepared by

BS

Date

3/2014

Standard Course Syllabus

Construction Systems Management

3546 Structures for Construction Managers II

Official Course Description

A continuation of CSM 3545 including concrete and masonry structures and foundations.

<u>Quarters of Offering</u>	<u>Credits</u>	<u>Level</u>	<u>Class Meeting Pattern</u>	<u>Course Supervisor</u>
Au, Sp	3	U	2 - 1.5 hr cl, 1 – 2 hr lab	Shepherd

Course Prerequisites

CSM 3545

ACCE Essential Elements of Instruction

Structural Mechanics (4.11), Soil mechanics (4.11), Civil (4.21), Structural (4.24), Composition and properties (4.31), Terminology & units of measure (4.32), Standard designations, sizes, and graduations (4.33), Conformance references and testing techniques (4.34), Products, systems, and interface issues (4.35), Comparative cost analysis (4.37), Building codes and standards (4.39), Graphic vocabulary (4.42), Detail hierarchies, scale, content (4.43), Construction contracts, roles & responsibilities of parties (5.41), Concepts, roles, and responsibilities (5.61).

Text(s)

1. Notes – Purchase at Barnes & Noble High St. location
2. Textbook – “Soils in Construction” 5th Edition Schroeder, Dickenson, Warrington

Course Objectives

The goals of this course are for the students to:

- Understand the properties of steel, concrete and masonry.
- Understand the basic principles used for steel, concrete and masonry design.
- Understand why unplanned cracks form in buildings.
- Increase their confidence in problem solving.
- Feel comfortable working with architects, engineers and specialty contractors.

Topics

- Strength
- Strength of material
- Steel design
- Steel joist
- Steel columns
- Steel connection
- Steel bracing
- Pre Eng Bldgs
- Light Gage Steel
- Concrete Design
- Masonry Design
- Cracking

Instructional Methods

Lecture, labs, and presentation

Assessments

Exam #1 22%

Exam #2	22%
Final Exam	22%
Homework	22%
CP's	2%
Lab	10%
Total	100%

Grading Scale:

93% = A	90% = A-	
87% = B+	83% = B	80% = B-
77% = C+	73% = C	70% = C-
67% = D+	60% = D	

Prepared by

VC

Date

3/2014

Standard Course Syllabus

Construction Systems Management

4605 Professional Development II

Official Course Description

Development and pursuing career plans; strategies and programs for employment in the construction industry, professional development, personal growth, and relationships.

<u>Quarters of Offering</u>	<u>Credits</u>	<u>Level</u>	<u>Class Meeting Pattern</u>	<u>Course Instructor</u>
Au, Sp	2	U	1 – 2 hr cl	Britt

Course Prerequisites

Prereq: 2305 (ConSysMt 305), 3451(ConSysMt 541), and AgrComm 3130 (390) or Comm 2110 (321), and any second writing course numbered 2367 (367). Not open to students with credit for ConSysMt 605 or AgSysMt 4605 (AgSysMgt 605).

ACCE Essential Elements of Instruction

Communication (1.1), Ethics (1.2)

Text(s)

Suggested: Locker, K.O. (2013). Business and Administrative Communication 10th hardback edition). New York: McGraw-Hill Higher Education.

Course Objectives

- Upon successful completion of this course the student will be able to:
- Explain the core competencies, knowledge, and skills he/she developed in his/her academic program and highlight your specific accomplishments.
- Market his/her strengths and skills for employment and career opportunities.
- Improve professional and interpersonal skills as they apply to interview and/or employment situations.
- Develop, design, and update career/professional support materials on LinkedIn.com.
- Identify and create a specific and measurable plan for his/her professional development goals.
- Recognize and consider how to apply the ethical standards of his/her industry in his/her own professional behavior.
- Identify relevant industry organizations and associations for his/her career interests and explain the benefits of participating in such organizations.
- Develop and deliver an effective presentation to a targeted audience.

Topics

- Updating resume
- Developing/refining elevator speech
- Creating a professional LinkedIn account
- Understanding employment benefits
- Knowing market value and negotiating your salary
- Improving interviewing skills through practice and mock interviews
- Considering ethics in the construction industry
- Experiencing professional associations and organizations
- Reviewing peer work and providing constructive criticism
- Creating a presentation to showcase interests and knowledge
- Refining presentation skills

Instructional Methods

Course instruction is delivered through class lectures.

Assessments

Ohio State University - Self Study for ACCE June 19, 2014

Professional Development Assignments	30%
Mock Interview Preparation and Participation	10%
Ethics Assignments	20%
LinkedIn Profile	10%

Grading Scale:

Letter grades are calculated based on the standard OSU grading scheme: 93 - 100 (A), 90 - 92.9 (A-), 87 - 89.9 (B+), 83 - 86.9 (B), 80 - 82.9 (B-), 77 - 79.9 (C+), 73 - 76.9 (C), 70 - 72.9 (C-), 67 - 69.9 (D+), 60 - 66.9 (D), Below 60 (E).

Prepared by

Date

AB

3/2014

Standard Course Syllabus
Construction Systems Management

4641 Construction Project Management

Official Course Description

The management of standard commercial/residential construction projects, including planning, scheduling, materials management, resource procurement, codes and standards, construction funding, personnel management, and labor unions.

<u>Semester of Offering</u>	<u>Credits</u>	<u>Level</u>	<u>Class Meeting Pattern</u>	<u>Course Instructor</u>
Au, Sp	2	U	2 - 1.5 hr cl	Q. Victoria Chen

Course Prerequisites

ConSysM 3451 (ConSysMt 541). Not open to students with credit for ConSysMt 641.

ACCE Essential Elements of Instruction

Ethics (1.2), Schedule Information Presentation (5.22), Resource Allocation and Management (5.24), Computer Applications (5.26), Record and Report Practices (5.34), Forecasting Costs, Cash Flow Requirements (5.36), Payment Processes and Time Value of Money (5.37), Lien Laws and the Contractor's Rights (5.43), National and Local Labor Law (5.44), Concepts, Roles, and Responsibilities (5.61), Labor Relations (5.62), Administrative Systems and Procedures (5.63), Cost Control Data and Procedures (5.64), Documentation at Job Site and Office (5.65), Computer Applications (5.67).

Texts

Required course packet sold at OSU Bookstore.

Suggested Readings:

Construction Project Management, Gould, F.E. and Joyce, N.E., 3rd Edition; Pearson Prentice Hall, Upper Saddle River, NJ, ISBN: 0131996231.

Construction Project Management: A Practical Guide to Field Construction Management, Sears, S.K., Sears, G.A., and Clough, R.H., 5th Edition, John Wiley & Sons, ISBN: 978-0-471-74588-4.

Construction Project Administration, Fisk, E.R. and Reynolds, W.D., 9th Edition, Prentice-Hall, Inc., ISBN: 0-13-500007-6.

Course Objectives

On completion of the course, the student will be able to:

- Understand the current construction industry, the complexity of construction projects, and challenges in project management
- Identify different project delivery methods and evaluate their influence on project procurement and management
- Apply proper strategies to manage construction resources effectively
- Understand how to use the construction schedule as a project management tool
- Build project cost model and identify financial management procedures
- Analyze project cost and time performance and apply control measures
- Identify various project risks and coping strategies to manage these risks
- Understand labor diversity and relations in construction
- Understand leadership development requirements and professional ethics for construction profession
- Understand and employ innovative management concepts and information technology applications

Topics

- Overview of the U.S. construction industry and new challenges in project management
- The influence of project delivery methods on project procurement and management
- Integrated Project Delivery (IPD) and Best Value Contracting (BVC)
- Construction resource management: Resource loading and leveling
- Managing a construction schedule and schedule updating

- Financial management: Schedule of values and project cost model, retention and progress payment, Cash flow management and application for final payment
- Time/cost monitoring and management: Earned value analysis and time/cost control
- Risk awareness, allocation and liability sharing
- Construction labor issues: Union/non-union, project labor agreement, labor diversity
- Lean construction: Identify and reduce waste in construction
- Building Information Modeling (BIM)
- Leadership development and professional ethics

Instructional Methods

This course is mainly delivered by lectures. There are also some recitation time and several computer labs for BIM.

Assessments

Class Attendance and Participation	75 pts (15%)
Homework Assignments (nine assignments)	250 pts (50%)
Midterm 1	100 pts (20%)
Midterm 2	75 pts (15%)
Total	500 pts (100%)

Grading Scale:

93% = A	90% = A-	
87% = B+	83% = B	80% = B-
77% = C+	73% = C	70% = C-
67% = D+	60% = D	

Prepared by

VC

Date

2/2014

Standard Course Syllabus

Construction Systems Management

4642 Construction Contracts and Documents

Official Course Description

Documents used in the construction industry will be discussed and applied; including types of contracts, bidding and negotiating, administration and quality control of construction contracts.

<u>Semesters of Offering</u>	<u>Credits</u>	<u>Level</u>	<u>Class Meeting Pattern</u>	<u>Course Supervisor</u>
Au, Sp	2	U	2 – 1.5 hr cl	Mark Scott/Mark Banta

Course Prerequisites

CSM 4541 or CSM 540.

ACCE Essential Elements of Instruction

Ethics (1.2), Equipment applications and utilization (4.36), Building codes and standards (4.39), Notes and specifications, reference conventions (4.44), Labor and equipment productivity factors (5.13), Bid preparations and bid submission (5.16), Schedule information presentation (5.22), Network diagramming and calculations with CPM (5.23), Impact of changes (5.25), Cost accounting and industry formats (5.31), Fixed and variable costs: insurance, bonding, marketing, general and administrative expenses (5.32), Bidding and procurement practices (5.33), Record and report practices (5.34), Payment processes and time value of money (5.37), Construction contracts, roles & responsibilities of parties (5.41), Lien laws and the contractor's rights (5.43), National and local labor law (5.44), Administrative procedures to avoid disputes (5.45), Concepts, roles and responsibilities (5.61), Documentation at job site and office (5.66).

Texts

Kelleher, T. J., Jr., Smith, Currie & Hancock. (2005). Common sense construction law: A practical guide for the construction professional, 3rd Edition, John Wiley & Sons, Inc.: New York, NY. ISBN: 0-471-66209-7

Course Objectives

Upon completion of the course the student will be able to:

- Describe the elements of construction contract formations
- Identify the role of each construction contractual party
- Identify the principles of construction documents, their order in a project manual and authorities for control of the contract.
- Identify types of contracts used in the construction industry and determine which types are best suited for a given construction project.
- Assess the different contract delivery methods and payment methods.
- Differentiate contracts specific to employing subcontractors and obtaining supplies.
- Apply contract bidding and negotiating principles through simulations.
- Analyze and explain how to effectively administer construction contracts.
- Identify documents for monitoring construction jobsite activities.
- Understand bonding and which construction bonds are required.
- Recite the insurance requirements for construction projects.
- Devise how construction schedules are linked to the contract, their purpose and requirements.
- Identify the role local, state, and federal codes and standards apply to construction contracts.
- Describe alternate dispute resolution methods and sequences.
- Analyze the role of construction financial documents.
- Improve written and oral communication skills with emphasis on the construction industry.
- Apply the ethics of construction contracting; bidding, contract formations, change order pricing, and the pit falls of bid shopping.

Topics

- Introduction to contracts, basic contract elements, the rule of law, US legal system, duties, authorities and

- responsibilities.
- Types of construction contract delivery methods and payment methods.
- Differentiating between different contract bidding processes
- Awareness of the contractual role of the Architect, Engineer or professional services provider.
- Contracting for a construction project, the enumeration of the documents and meaning of the “whole contract.”
- Scheduling and contractual matters of time for a construction project
- Understanding the change order process and implementation of its requirements.
- Understanding the payment request process and implementation of its requirements.
- Understanding building commissioning and its relationship to contract requirements and project delivery.
- Understanding contract close out, its requirements,
- Leadership and the development of ethics through competitive processes.

Instructional Methods

This course is mainly delivered by lectures. There are also some recitation times where situational exercises as well as simulations are presented and the student needs to work through them either individually or in a group.

Assessments

Exam:	150 Points
Quizzes	300 Points
Attendance	100 Points
Bid Day Exercise	50 Points
Homework	500 Points
Total	1,000 Points

Grading Scale:

93% = A	90% = A-	
87% = B+	83% = B	80% = B-
77% = C+	73% = C	70% = C-
67% = D+	60% = D	

Prepared by

MS

Date

3/2014

Standard Course Syllabus
Construction Systems Management

4660 Heavy Construction Management

Official Course Description

Methods, materials, equipment, and planning of heavy construction projects. Economics of equipment acquisition and operation. Equipment selection, performance characteristics, and production rates.

<u>Quarters of Offering</u>	<u>Credits</u>	<u>Level</u>	<u>Class Meeting Pattern</u>	<u>Course Instructor</u>
Au, Sp	3	U	2 -1.5 hr cl	Shearer

Course Prerequisites

CONSYSM 3451 (CONSYSM 541). Not open to students with credit for CONSYSM 660.

ACCE Essential Elements of Instruction

Ethics (1.2), Soil mechanics (4.11), Civil (4.21), Labor and equipment productivity factors (5.13), Parameters affecting project planning (5.21), Fixed and variable costs; insurance, bonding, marketing, general and administrative expenses (5.32), Bidding and procurement practices (5.33), Capital equipment, depreciation, and expensing (5.35), Forecasting costs, cash flow requirements (5.36), Payment processes and time value of money (5.37), Safe practices (5.51)

Text(s)

Peurifoy, R.L., C.J. Schexnayder, A. Shapira and R.L. Schmitt. 2006. Construction Planning, Equipment and Methods. 8th Ed. McGraw Hill: New York, NY.

Course Objectives

On completion of this course students will be able to:

- Understand scope, range and operating principles of equipment used in heavy construction;
- Develop a lexicon of equipment terms and concepts relating to site preparation, earth moving, paving and concrete placement;
- Estimate the hourly cost of ownership and operation of equipment;
- Select and match equipment to various construction tasks, and
- Calculate equipment productivity rates. All of these course objectives are focused on heavy construction.

Topics

- Heavy Construction History (Chapter 1)
- Equipment Economics (Chapter 2)
- Planning for Earthwork Construction (Chapter 3)
- Soil and Rock (Chapter 4)
- Compaction and Stabilization (Chapter 5)
- Mobile Equipment Power Requirements (Chapter 6)
- Dozers and Scrapers (Chapters 7 and 8)
- Excavators and Trucks (Chapters. 9 and 10)
- Finishing Equipment (Chapter 11)
- Drilling Rock and Earth (Chapter 12)
- Blasting Rock (Chapter 13)
- Aggregate Production (Chapter 14)
- Asphalt Mix, Production and Placement (Chapter 15)
- Concrete and Concrete Equipment (Chapter 16)
- Cranes and Pile-Driving Equipment (Chapter 17 and 18)

Instructional Methods

This course consists of two, 80 minute lectures each week.

Assessments

Homework	30%
Quizzes	20%
Participation	10%
Exam No. 1	20%
Exam No. 2	20%

Grading Scale:

A \geq 92%
92% > A- \geq 89%
89% > B+ > 86%
86% > B > 83%
83% > B- > 80%
80% > C+ \geq 77%
77% > C \geq 74%
74% > C- > 71%
71% > D+ > 68%
68% > D > 65%
< 65% E

Prepared by

SAS

Date

4/2014

Standard Course Syllabus
Construction Systems Management

4900 Construction Management Capstone
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Official Course Description

Skills in estimating, scheduling, blueprint reading, teamwork, oral written communication, management principles and contracts/documents used to develop solution to industry provided construction related problems.

<u>Quarters of Offering</u>	<u>Credits</u>	<u>Level</u>	<u>Class Meeting Pattern</u>	<u>Course Instructor</u>
Au, Sp	3	U	2 – 1.5 hr cl	Ware

Course Prerequisites

CSM 3546, 4641, 4642 or permission of the instructor.

ACCE Essential Elements of Instruction

Communication, Oral and Written (1.1); Ethics (1.2); Design Theory (4.1); Analysis and Design of Construction Systems Mechanical (4.23); Analysis and Design of Construction Systems Structural (4.24); Composition and Properties (4.31); Terminology & Units of Measure (4.32); Standard Designations, Sizes and Graduations (4.33); Conformance References and Testing Techniques (4.34); Products, Systems and Interface Issues (4.35); Equipment Applications and Utilization (4.36); Comparative Cost Analysis (4.37); Assembly Techniques & Equipment Selection (4.38); Building Codes and Standards (4.39); Basic Sketching and Drawing Techniques ((4.41); Graphic Vocabulary (4.42); Detail Hierarchies, Scale & Content (4.43); Computer Applications (4.45); Quantity Takeoff (5.12); Labor and Equipment Productivity Factors (5.13); Pricing and Price Databases (5.14); Job Direct and Indirect Costs (5.15); Bid Preparations and Bid Submission (5.16); Parameters Affecting Project Planning (5.21); Schedule Information Presentation (5.22); Network Diagramming and Calculations with CPM (5.23); Impact of Changes (5.25); Computer Applications (5.26); Cost Accounting and Industry Formats (5.31); Fixed and Variable Costs: Insurance, Bonding, Marketing, General and Administrative Expenses (5.32); Bidding and Procurement Practices (5.33); Record and Report Practices (5.34); Construction contracts, roles & responsibilities of parties (5.41); The regulatory environment and licensing (5.42); Lien laws and the contractor's rights (5.43); National and local labor law (5.44); Administrative procedures to avoid disputes (5.45); Safe Practices (5.51); Labor Relations (5.62); Cost Control Data and Procedures (5.63); Documentation and Job Site and Office (5.65).

Text(s)

The students study a full set of drawings and specifications from a recent Central Ohio Project.

Course Objectives

This course (experience) is designed to develop the student's ability to:

- Set up an estimate format, prepare and deliver a formal project proposal.
- Describe various theories of management and how they apply to the construction industry.
- Explain the management functions important for an effective construction manager.
- Understand the principles of construction systems.
- Explain the role of planning in the on-time completion of construction projects.
- Demonstrate skills in resource and schedule control, including value engineering and constructability analysis.
- Apply principles for determining required quantities of equipment and personnel.
- General ethics discussion: how to discourage bid shopping; under the table "deals," last look on bid day; appropriate purchasing tactics for subcontract and purchase orders, etc.
- Provide effective leadership and maintain quality construction.
- Implement methods to minimize jobsite stress.
- Improve written and oral communication skills with emphasis on the construction industry.
- Improve teaming skills needed for formal and informal teams and team presentations.

Topics

- Create a two person construction firm.
- Write a letter of introduction asking to be placed on the bidders list.

- Create full quantity survey and pricing for the entire project.
- Complete and submit the formal bid in a bid envelope.
- Create a full CPM schedule with Gantt Chart and Logic Diagram.
- Transfer estimate costs into a cost code document.
- Create a contract with the Owner, a subcontract and a purchase order.
- Develop a Schedule of Values and establish two months of pay applications, based on schedule progress.
- Process a bulletin with transmittal to affected subcontractors.
- Discuss how to handle punch list items.
- Discuss close out method, including creating close out document notebooks.
- Site tour of the building being studied.

Instructional Methods

This course consists of two 1 ½ hour lectures per week.

Assessments

Project Estimate	30%
Project Schedule	20%
Homework	50%

Grading Scale:

93% = A	90% = A-	
87% = B+	83% = B	80% = B-
77% = C+	73% = C	70% = C-
67% = D+	60% = D	

Prepared by

WMW

Date

3/2014

Standard Course Syllabus

Construction Systems Management

5670 Green Building and Sustainable Construction

Official Course Description

Introduction to LEED rating system, major components of sustainable building design and construction as well as other environmental and economic issues related to sustainable built environments.

<u>Semester of Offering</u>	<u>Credits</u>	<u>Level</u>	<u>Class Meeting Pattern</u>	<u>Course Instructor</u>
Au, Sp	3	U/G	2 – 2 hr cl	Q. Victoria Chen

Course Prerequisites

Jr, Sr, or Grad standing. Not open to students with credit for ConSysMt 670.

ACCE Essential Elements of Instruction

Electricity (4.11), Thermodynamics (4.11), Civil (4.21), Electrical (4.22), Mechanical (4.23), Structural (4.24), Composition and properties (4.31), Terminology & units of measure (4.32), Products, systems, and interface issues (4.35), Equipment applications and utilization (4.36), Assembly techniques & equipment selection (4.38), Building codes and standards (4.39), Concepts, roles and responsibilities (5.61), Administrative systems and procedures (5.63), Documentation at job site and office (5.65), Quality control philosophies and techniques (5.66), Computer applications (5.67).

Texts

Required course packet sold at OSU Bookstore.

Textbooks Recommended:

Sustainable Construction: Green Building Design and Delivery, Second Edition, Charles J. Kibert, Wiley, ISBN: 0470114215.

Other Reference Books:

LEED Reference Guide for Green Building Design and Construction, 2009 Edition, USGBC.

The HOK Guidebook to Sustainable Design, Second Edition, Sandra Mendler, William Odell, and Mary Ann Lazarus, John Wiley & Sons, Inc, ISBN: 978-0-471-69613-1.

Green Remodeling: Change the World One Room at a Time, David Johnston and Kim Master, New Society Publishers, ISBN: 978-0-86571-498-4.

Natural Remodeling for the Not-So-Green House: Bringing Your Home into Harmony with Nature, Carol Venolia and Kelly Lerner; Lark Books, ISBN: 1579906540.

The Rough Guide to Climate Change, 2nd Ed., R. Henson, Rough Guides Ltd, ISBN: 1858281059.

Course Objectives

On completion of the course, the student will be able to:

- Understand the environmental impacts of building development, operation, demolition and disposal
- Utilize the triple bottom line principle to evaluate the sustainability of building and land development
- Identify the requirements for green buildings and the LEED project certification
- Understand, evaluate, select and adopt green building strategies in five major sustainable categories
- Develop decision-making and problem-solving skills in sustainable design and construction practices
- Develop personal definition and vision statement in terms of sustainable development in their future career fields.

Topics

- Introduction to sustainability and green building
- LEED rating system, certification process, and professional accreditation test
- Sustainable sites
- Water efficiency
- Energy-efficient (EE) building strategies
- Building energy simulation and analysis tools

- Whole building energy simulation – eQUEST lab
- Renewable energy systems
- Green building materials and products
- Construction waste management
- Indoor environment quality
- Green construction: Best practices
- Evaluation of sustainability—life cycle assessment

Instructional Methods

This course is mainly delivered by lectures. Also included are one whole building energy simulation lab and a number of guest lectures and field trips.

Assessments

Class Attendance and Participation	90 pts (15%)
Homework Assignments (eight assignments)	240 pts (40%)
Course project	60 pts (10%)
Midterm	90 pts (15%)
Final Examination	120 pts (20%)
Total	600 pts (100%)

Grading Scale:

93% = A	90% = A-	
87% = B+	83% = B	80% = B-
77% = C+	73% = C	70% = C-
67% = D+	60% = D	

Prepared by

QC

Date

3/2014

Standard Course Syllabus

Construction Systems Management

5680 Construction Renovation and Demolition

Official Course Description

An introduction and study of renovation and demolition industry practices and procedures as encountered by construction managers. Focus of study to include: Introduction to renovation and demolition industry, codes/regulations, scheduling/estimating techniques, resource management, hazardous materials/safety, material waste/reuse/recycling, feasibility/structural issues, working in occupied spaces, and project management strategies.

<u>Semesters of Offering</u>	<u>Credits</u>	<u>Level</u>	<u>Class Meeting Pattern</u>	<u>Course Supervisor</u>
Au, Sp	3	U/G	1 – 3 hr cl	Suchy

Course Prerequisites

ConSysM 4642 (or concurrent)

ACCE Essential Elements of Instruction

Quantity takeoff (5.12), Labor and equipment productivity factors (5.13), Pricing and price data bases (5.14), Job direct and indirect costs (5.15), Bid preparations and bid submission (5.16), Computer applications (5.17), Parameters affecting project planning (5.21), Schedule information presentation (5.22), Network diagramming and calculations with CPM (5.23), Resource allocation management (5.24), Impact of changes (5.25), Computer applications (5.26), Forecasting costs, cash flow requirements (5.36), Safe practices (5.51), Concepts, roles, and responsibilities (5.61), Labor relations (5.62), Documentation at job site and office (5.65), Quality control philosophies and techniques (5.66), Computer applications (5.67)

Text(s)

Diven, R.J. and Shaurette, M. (2010). *Demolition: Practices, Technology, and Management*. West Lafayette, IN: Purdue University Press.

Course Objectives

- Upon successful completion of CSM 5680, the student will have the ability to:
- Describe the construction renovation and demolition industry and the unique implications for the project manager
- Identify codes and regulations specific to the renovation and demolition industry sector and be able to reference such applicable information
- Develop and utilize fundamental renovation and demolition scheduling and estimating techniques
- Understand unique challenges related to resource management, including manpower, equipment and materials
- Recognize hazardous materials typically encountered on renovation and demolition projects and employ appropriate mitigation procedures
- Recognize and apply unique safety requirements on renovation and demolition projects
- Identify and inventory material waste, reuse and recycling on renovation and demolition projects
- Identify basic principles in the preparation and coordination of feasibility, structural and risk analysis studies
- Recognize the challenges and issues associated with working in “occupied” building spaces including: occupants, environmental quality, safety and work scheduling
- Examine and employ project management strategies specific to renovation and demolition projects

Topics

- Overview of demolition and renovation industry
- Review of demolition and renovation practices
- Types of demolition including buildings and other structures
- Demolition specific regulations and policies
- Estimating techniques for demolition and renovation projects
- Demolition and renovation safety: Site specific safety plans

- Demolition and renovation equipment
- Material handling, recycling and reuse
- Project management practices and techniques: Developing the plan for work
- Professional ethics
- Written and oral project proposals and presentations

Instructional Methods

The delivery method for this course consists of lectures and job site visits.

Assessments

The **approximate** breakdown of grades will be as follows. Final breakdown may vary depending on assignments.

Attendance and class participation	10%
Classroom/field exercises	20%
Quizzes and Homework	30%
Final Project	40%

Grading Scale:

93% = A	90% = A-	
87% = B+	83% = B	80% = B-
77% = C+	73% = C	70% = C-
67% = D+	60% = D	

Prepared by

JTS

Date

4/2014

Prerequisite:

A grade of C- or better in Mathematics 1075, or Course Code N on the Mathematics Placement Test.

Catalog Description:

Functions and their representations, relations, transformations of functions, function composition, algebraic and graphical structure of a function, inverse functions, polynomial functions, and application of functions. Equations and systems of equations, roots, symmetry, solving linear equations and systems, solving polynomial and rational inequalities.

Purpose of Course:

College Algebra provides students a college level academic experience that emphasizes the use of algebra and functions in problem solving and modeling, where solutions to problems in real-world situations are formulated, validated, and analyzed using mental, paper-and-pencil, algebraic and technology-based techniques as appropriate using a variety of mathematical notation. Students should develop a framework of problem-solving techniques (e.g., read the problem at least twice; define variables; sketch and label a diagram; list what is given; restate the question asked; identify variables and parameters; use analytical, numerical and graphical solution methods as appropriate; determine the plausibility of and interpret solutions). – Adapted from the MAA/CUPM CRAFTY 2007 College Algebra Guidelines. This course is intended to satisfy the requirements of the Ohio Board of Regents TMM001 College Algebra course with learning outcomes specified in: <http://regents.ohio.gov/transfer/otm/otm-learning-outcomes.php>

GEC Information: This Mathematics course can be used, depending on your degree program, to satisfy the Quantitative and Logical Skills category of the General Education Requirement (GEC). The goals and learning objectives for this category are:

- **Goals:** To develop logical reasoning, including the ability to apply mathematical concepts and methods and to use mathematical models.
- **Learning objectives:** Students learn mathematical methods adequate to solve basic application-oriented problems. Students learn algebraic problem solving skills useful in more advanced mathematics and science courses.

Follow-up Course: Mathematics 1149 for those students needing to take Mathematics 1151.

Textbook: J. Stewart, L. Redlin, and S. Watson. Precalculus: Mathematics for Calculus. Sixth Edition. Cengage. 1008 pages. ISBN13: 9781133904489 ISBN10: 0840068077

Technology: All students are **required** to have a graphing calculator, TI-83 or TI-84.

Note: Any calculators (including TI-89 and TI-92) that use a Computer Algebra System (CAS) are not permitted.

Course Grade:

Exam 1 (Monday, September 23 th):	100 points (§ 1.7 – 3.1)
Exam 2 (Monday, October 21 st):	100 points (§ 3.2 – 3.3 & §3.5 – 4.2)
Exam 3 (Wednesday, November 13 th):	100 points (§ 4.3 – 4.6)
Recitation score:	100 points total (Homework: 30 pts & Quizzes: 70 pts)
Final (Monday, December 9 th):	200 points (All sections covered)

600 total points for the course

Percentage Grading Scale:

90% A 87% A- 83% B+ 80% B 77% B- 73% C+ 70% C 67% C- 63% D+ 60% D

Exam Rooms: Exams will **NOT** be held in your regular classroom. Room assignments will be **announced in class** and **posted on the Math 1148 website** the week before an exam. If an exam is cancelled because of a university class cancellation (for example, in a snow emergency), the exam will be rescheduled as announced in lecture. Sections that are covered in the interim may appear on the rescheduled exam. You must have your Buck ID at each exam.

Make-Up Exams: You must have a **permission slip** that has been completed by your lecturer to take a make-up exam. To receive a permission slip, you must provide your lecturer with documentation demonstrating a conflict with the regularly scheduled exam. Students who have a time conflict with another regularly scheduled OSU course may take the make-up exam. Students with other types of time conflicts (such as social activities) should prearrange to take the exam at the scheduled time and date. Make-up midterms are scheduled for the morning after each midterm 8:00 – 8:55 am in HI 031. The make-up final is scheduled for Tuesday, December 10th. See your lecturer for the location of a make-up exam final.

Extra Help:

Office Hours: Your lecturer and recitation instructor will have office hours for individual help.

MSLC (Mathematics and Statistics Learning Center) offers the following services:

- **Tutor Room:** The Math 148 tutor room is located in Cockins Hall, room 014 and is open Monday through Thursday, 9:10am – 5:05pm and Friday, 9:10am – 1:35pm, starting Wednesday August 28th.

Evening tutoring hours are Monday through Thursday 5:20pm – 8:00pm

- **Exam Review Sessions**
- **Workshops**

Please visit the MSLC website, <https://www.mslc.osu.edu/courses/1148> for more information.

Disability Statement: Students with disabilities that have been certified by the Office of Disability Services will be appropriately accommodated and should inform the instructor as soon as possible of their needs. The Office of Disability Services is located in 150 Pomerene Hall, 1760 Neil Avenue; telephone 292-3307, TDD 292-0901 <http://www.ods.ohio-state.edu/>

RECITATION:

Homework: Homework consists of online homework (graded) and additional offline assignments (ungraded) from the course textbook. Access information for online homework will be available from your lecturer on the second day of lecture. ***Students are responsible for completing online homework before it falls due – the online homework system does not accept homework that is overdue.***

The offline assignments are listed under Math 1148 Homework Assignments.

You are responsible for all homework, whether graded or not.

(Students will need a course grade of C– or better in Math 1148 in order to progress to Math 1149.)

Quizzes: There are ten quizzes which are based on homework assignments and will be given in your recitation class. The best seven quiz scores will count towards your quiz grade. **There will be no make-up of quizzes; if you miss a quiz that will be one of your three dropped scores.**

Carmen: Carmen is a web-based course tool that allows you to view your grades. You can access Carmen by visiting <http://carmen.osu.edu>. You will need your OSU ID and password (the same ID and password which you use to access the Registrar's website).

Academic Misconduct Statement: It is the responsibility of the Committee on Academic Misconduct to investigate or establish procedures for the investigation of all reported cases of student academic misconduct. The term academic misconduct includes all forms of student academic misconduct wherever committed; illustrated by, but not limited to, cases of plagiarism and dishonest practices in connection with examinations. Instructors shall report all instances of alleged academic misconduct to the committee. For additional information, see the Code of Student Conduct:

<http://studentaffairs.osu.edu/resource/csc.asp>

MATH 1148 HOMEWORK AUTUMN 2013

WebAssign Homework: Each homework problem in WebAssign is assigned a score of 1-4 points. To earn the maximum of 30 homework points listed on the syllabus, a student needs to earn at least 80% of the available points in WebAssign. Due dates are enforced and a student is allowed only five attempts per problem.

The practice problems listed below are intended to supplement practice provided by the graded homework.

Sec.	Title	Practice Problems
1.7	Inequalities	11-87 <i>every other odd</i> (eoo)
2.1	What is a function?	15-63 odd, 72, 75, 79
2.2	Graphs of functions	11-27 odd, 33-45 odd, 49-67 odd, 71, 83
2.3	Information from a graph	1-25 odd, 47, 48
2.4	Avg Rate of Change	5-25 odd
2.5	Transformations	1-81 eoo, 83, 85
2.6	Combining Functions	5-13 odd, 21-31 odd, 33-57 odd, 62
2.7	One-to-one and inverses	1-4, 5-57 odd, 62, 63, 75, 77
3.1	Quadratics	1-41 odd, 51-61 odd, 63, 64, 75, 78
3.2	Polynomials	1-4, 5-67 odd, 83, 84
3.3	Polynomial Division	3-33 odd, 39-67 odd
3.5	Complex Numbers	5-41 odd, 47-63 odd
3.6	Complex Zeros	5-67 odd
3.7	Rational Functions	1-6, 7-53 odd, 65-71 odd, 83
4.1	Exponential Functions	1-4, 5-57 odd
4.2	Natural Exponential Function	1, 2, 3-37 odd
4.3	Logarithms	1-6, 7-77 odd, 87-91 odd
4.4	Laws of Logarithms	1-6, 7-71 odd, 72
4.5	Exponential and Log equations	2, 3-85 odd
4.6	Modeling with Exponentials and Logs	1-21 eoo, 23-41 odd
10.1	Systems of linear equations	5-71 eoo
10.2	3 by 3 Systems	1-6, 7-15 odd, 17-33 eoo, 41-45 odd
6.1	Angle Measure	1-73 odd
6.2	Trig of Right Triangles	1-37 odd, 49, 51, 55
6.3	Trig Functions	3-33 odd

Catalog Description:

Functions: polynomial, rational, radical, exponential, logarithmic, trigonometric, and inverse trigonometric. Applications.

Prerequisite:

Math Placement Level M.

Exclusions:

Not open to students with credit for 1144, 1148, 1149, for any higher numbered math course, or for any quarter-system math course 150 or higher.

Text:

Precalculus: Mathematics for Calculus, 6th Edition, by J. Stewart, L. Redlin, and S. Watson, published by Cengage, ISBN Loose-leaf: 9781133904489 Hardback: 9780840068077

Technology:

Every student is required to have a graphing calculator comparable in capability to a TI-83 or TI-84. However, calculators with symbolic algebra capabilities are not allowed during exams or quizzes.

Topics List:

- 2.1 Functions
- 2.2 Graphs of Functions
- 2.3 Information from Graphs
- 2.4 Average Rate of Change
- 2.5 Transformations of Functions
- 2.6 Combining Functions
- 2.7 One-to-One Functions and Their Inverses
- 3.1 Quadratic Functions
- 3.2 Polynomial Functions and their Graphs
- 3.3 Dividing Polynomials (Remainder and Factor Theorems)
- 3.6 Complex Zeros and Fundamental Theorem of Algebra
- 3.7 Rational Functions

Midterm 1

- 1.7 Inequalities (Polynomial and Rational Inequalities)
- 4.1/4.2 Exponential and Natural Exponential Functions
- 4.3 Logarithmic Functions
- 4.4 Laws of Logarithms
- 4.5 Exponential and Logarithmic Equations
- 4.6 Modeling with Exponential and Logarithmic Functions
- 6.1 Angle Measure
- 6.2 Trigonometry of Right Triangles
- 6.3 Trigonometric Functions of Angles
- 5.1 The Unit Circle
- 5.2 Trigonometric Functions of Real Numbers
- 5.3 Trigonometric Graphs
- 5.4 More Trigonometric Graphs
- 5.5 Inverse Trigonometric Functions and Their Graphs
- 6.4 Right Triangles
- 6.5 The Law of Sines
- 6.6 The Law of *Cosines*

Midterm

2

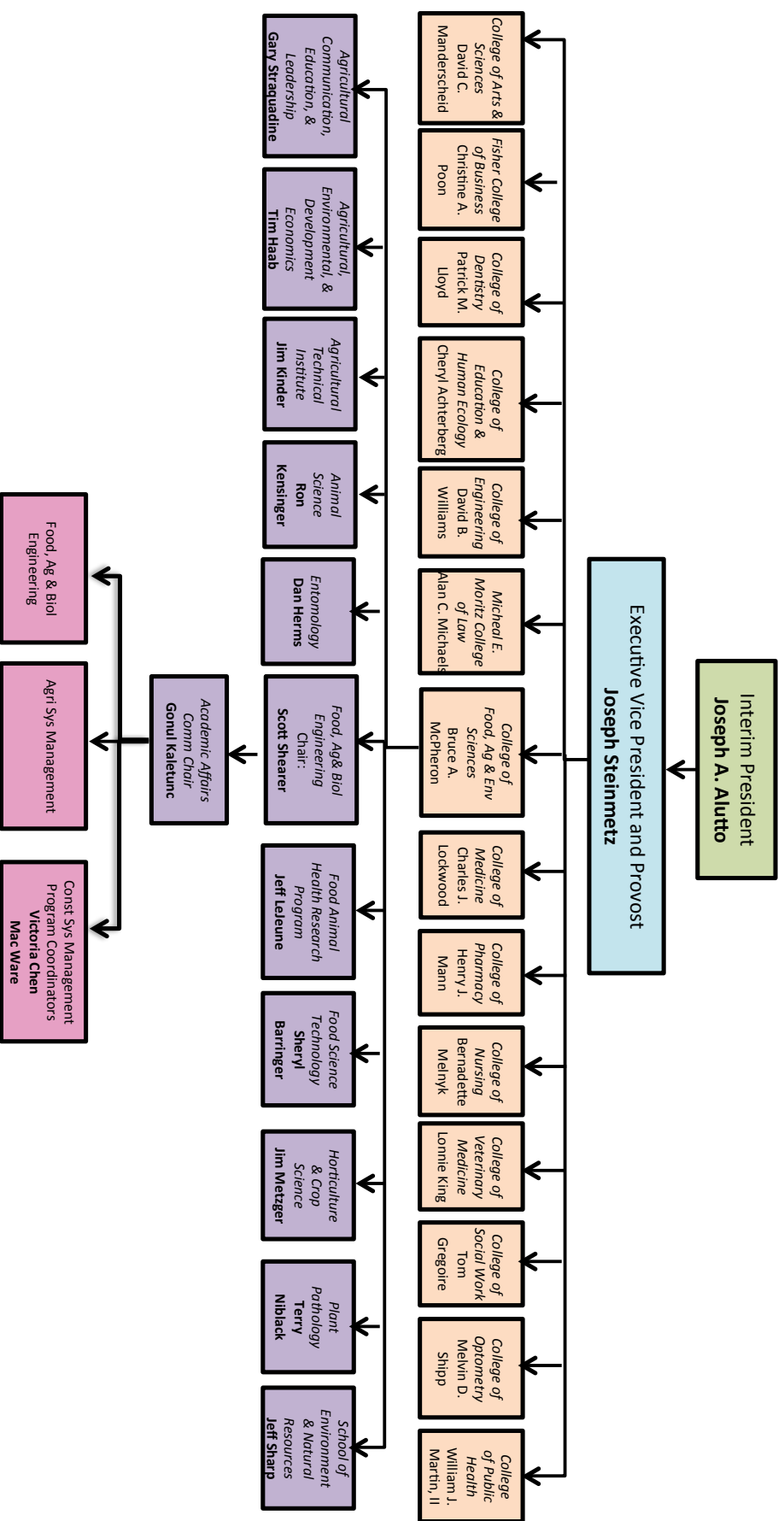
- 7.1 Trig. Identities
- 7.2 Addition and Subtraction Formulas
- 7.3 Double/Half Angle and Product-Sum Formulas
- 7.4 Trig. Equations
- 7.5 More Trig. Equations
- 8.3 Polar Forms of Complex Numbers; De Moivre's Theorem
- 9.1 Vectors in Two Dimensions
- 9.2 The Dot Product
- 10.1 Systems of Linear Equations in Two Variables
- 10.2 Systems of Linear Equations in Several Variables
- 11.1 Parabolas
- 11.2 Ellipses
- 11.3 Hyperbolas

Midterm

3

- 12.1 Sequences and Summation Notation
- 12.2 Arithmetic Sequences
- 12.3 Geometric Sequences

C. Organization Charts



D. Curriculum Advising Sheet

B.S. in Construction Systems Management
Major: Construction Systems Management
Effective Summer 2013

6/12/13

All students must complete two Global Issues courses (▲). This requirement is the successor to the diamond/ asterisk requirement. All students must fulfill a Social Diversity requirement in the GEC which can be done by completing Rural Sociology 1500 or Sociology 1101.

FAES 1100 and Dept. Seminar (.5, .5)	1	Social Science 1 (Rur Soc 1500 or Soc 1101)	3
English 1110	3	Social Science 2 (AED Econ 2001 or Econ 2001)	3
Writing Level 2 (2367) (See Approved CFAES GE List)	3	Historical Study (See approved CFAES GE List)	3
Agr Comm 3130 or Comm 2110	3	Culture & Ideas or Historical Study (See approved CFAES GE List)	3
Math 1148	4	Literature (See approved CFAES GE List)	3
Data Analysis (COMLDR 3537, AEDE 2005, ANIMSCI 2260, HCS 2260, ENR 2000, STAT 1450)	3	Art (See approved CFAES GE List)	3
Entomology 1111	4	Construction Sys Mgt Core	55
Physics 1200	5	Construction Management Supporting Courses (minor equivalent)	15-18
Earth Science 1121	4	Internship (CSM 3191)	2
ENR 3000 & 3001	4		2
		Electives	3-6
		TOTAL CREDIT HOURS	130

1. Construction Systems Management Core	55	2. Construction Management Supporting Courses	15-18
CSM 1205 Intro to Construction Management	3	Principles of Management (Choose one)	
CSM 2240 Construction Materials & Methods I	3	AEDECON 3101 Principles of Agribusiness Management	3
CSM 2241 Construction Materials & Methods II	3	BUS-MHR 3100 Foundations of Management and HR	3
CSM 2305 Professional Development I	2	Accounting (Choose one)	
CSM 2310 Electrical & Lighting Systems for Bldgs	3	AEDECON 2105 Managerial Records and Analysis	3
CSM 2345 Mechanical Systems for Buildings	3	ACCT&MIS 2200 Introduction to Accounting I	3
CSM 2440 Construction Surveying & Site Develop	4	ACCT&MIS 2000 Foundations of Accounting	3
CSM 2600 Construction Safety and Health	3	Business Law (Choose one)	
CSM 3450 Estimating for Construction	4	AEDECON 3170 Agricultural Law	3
CSM 3451 Scheduling Construction Projects	4	BUS-FIN 3500 Legal Environment of Business	1.5
CSM 3545 Structures for Construct Managers I	3	ENR 7520 ¹ Environmental Science and Law	3
CSM 3546 Structures for Construct Managers II	3	Finance (Choose one)	
CSM 4605 Professional Development II	2	AEDECON 3103 ² Principles of Agribusiness Finance	3
CSM 4641 Construction Project Management	2	BUS-FIN 3120 ³ Foundations of Finance	3
CSM 4642 Construction Control Contracts	2	ISE 2040 Engineering Economic Analysis	2
CSM 4660 Heavy Construction Management	3	Human Resources (Choose one)	
CSM 4900 Construction Management Capstone	3	AEDECON 3160 Human Resource Mgt In Small Business	2
CSE 1112 Computer Problem Solving for CSM	3	BUS-MHR 3300 Managing Human Resources	3
ENGR 1121 Graphics Presentation I	2	COMLDR 3530 Foundations of Pers and Prof Leadership	3
		COMLDR 4430 Leadership in Teams and Community Org	3
		Technical/ Business Electives (Choose one)	
		CSM 5670 Green Bldg and Sustainable Construction	3
		CSM 5680 Construction Renovation and Demolition	3
		ASM 3232 Engines and Power Transmission	3
		ASM 4575 Applied Ag Water Management	3
		xxx 3797 Study Abroad	1-5
		xxx 5797 Study Abroad	1-5
		ACCT&MIS 2300 Introduction to Accounting II	3
		AEDECON 3102 Principles of Agribusiness Marketing	3
		AEDECON 3121 Salesmanship in Agriculture	2
		BUS-FIN 3290 Entrepreneurial Finance	3
		BUS-FIN 3400 Introduction to Real Estate	3
		BUS-FIN 4412 Real Estate Law	3
		BUS-M&L 3150 Foundations of Marketing	3
		BUS-M&L 3241 Introduction to Entrepreneurial Marketing	3
		BUS-MGT 3130 Foundations of Operations Management	3
		BUS-MHR 2000 Introduction to International Business	1.5
		BUS-MHR 3510.01 New Venture Creation	3
		BUS-MHR 3520 Leading High-Performance Ventures	3

Prerequisites:

¹ ENR 4000

² AED Econ 2105 or Acct&MIS 2200

³ Acct&MIS 2000

E. Course Requirements and Sequences by Semester

CONSTRUCTION SYSTEMS MANAGEMENT

Rev. 6/5/13

Name: _____ **2013 - 2014** ID #: _____

E-Mail: _____ Entered OSU: (Qtr) _____ (Acad Yr) _____

**** NOTE: Available in Room AE 260: (1) Gen Ed course selections (2) CFAES sheet with business core courses, etc.**

	AUTUMN	Hours	SPRING	Hours
1	CFAES/CSM 1100 (Survey Class)	1	CSM 2240 (Construction Methods & Materials I)	3
	CSM 1205 (Intro to Construction Management)	3	Engineering 1121 (Graphics)	2
	English 1110 (First-Year Composition)		AEDE 2001 or Econ 2001.01 (Micro Economics)	
	Entomology 1111 (Bio of Orgnms affecting Bldgs)		Physics 1200 (Mechanics, Kinetics, Fluids, Waves)	
	Math 1148 (College Algebra)		ENR 3000 & 3001	
Target/ Total:		15	Target/ Total: 17	
2	CSM 2241 (Construction Methods & Materials II)	3	CSM 2345 (Mechanical Systems for Buildings)	3
	CSM 2305 (Prof Development I)	2	CSM 2440 (Construction Surveying & Site Developmt)	4
	CSM 2310 (Electrical and Lighting Systems)	3	CSM 2600 (Construction Safety & Health)	3
	CS&E 1112 (Intro Comptr-Assstd Prblm Solv)	3	Ag Communications 3130 or Communications 2110	
	Accounting Choice (AEDE 2105 Recommended)		Second Writing (xxx 2367)	
Target/ Total:		17	Target/ Total: 16	
3	CSM 3450 (Estimating)	4	CSM 3451 (Scheduling)	4
	CSM 3545 (Structures for Construction Mgrs I)	3	CSM 3546 (Structures for Construction Managers II)	3
	Business Law Selection		Finance, AEDE 3103	
	Management Selection		Rural Soc 1500 or Sociology 1101	
	History Selection		Earth Science 1121	
Target/ Total:		16	Target/ Total: 17	
4	CSM 4641 (Construction Project Management)	2	CSM 3191 (Internship)	2
	CSM 4642 (Construction Contracts/Documents)	2	CSM 4900 (Construction Management Capstone)	3
	CSM 4605 (Professional Development II)	2	Department Exit Survey (required, will come via e-mail)	
	CSM 4660 (Heavy Construction Management)	3	Art Selection	
	Human Resources Selection		Cultures & Ideas Selection	
Target/ Total:		15	Target/ Total: 17	

General Education (GE) Requirements: 24 hours

> Students must complete 2 *Global Issues* courses. (Δ) _____ (Δ) _____ (√ as completed)

English 1110..... 3 _____ Writing Level II (xxx.2367) _____ Ag Comm 3130 (or Comm 2110) 3 _____ Math 1148..... 4 _____ Data Analysis _____ () _____ Social Science I _____ (Soc 1101 or Rurl Soc 1500) 3 _____ Social Science II _____ (AED Econ 2001 or Econ 2001.01) 3 _____ Historical Study _____ 3 _____ Cultures & Ideas or _____ Historical Study II _____ 3 _____ Literature _____ 3 _____ Art _____ 3 _____	Entomology 1111..... 4 _____ Physics 1200..... 5 _____ Earth Science 1121..... 4 _____ ENR 3000/3001..... 4 _____ ² Social Diversity Completed? Free Electives: _____ () _____ _____ () _____ _____ () _____ _____ () _____ Total CSM Core 55 _____ CSM Supporting Core 15-18 _____ Internship (CSM 3191) 2 _____ Electives 3-6 _____
--	---

CSM Support Courses (15-18 hours)

(see tan CFAES curriculum sheet for course options)

Principles of Management

_____ () _____

Accounting

_____ () _____

Business Law

_____ () _____

Human Resources

_____ () _____

Finance

_____ () _____

Technical / Business Electives

_____ () _____

Total Credit Hours: 130 _____

² **DOUBLE COUNTING:** To avoid taking an extra course, choose a GE course from the back of this sheet indicating it can also fulfill a second requirement. **MAKE SURE** the chosen course fulfills the proper second category. Soc 1101 or Rur Soc 1500 fulfill social diversity requirement.

> No course can fulfill more than TWO categories. <

F. The Proposed Curriculum Change

B.S. in Construction Systems Management
Major: Construction Systems Management
Effective Fall 2014

All students must complete two Global Issues courses (▲). This requirement is the successor to the diamond/ asterisk requirement. All students must fulfill a Social Diversity requirement in the GE which is done by completing Rural Soc 1500 or Soc 1101.

FAES 1100 (0.5 cr hr) and CSM 1100 (0.5 cr hr)	1	Social Science 1: Rur Soc 1500 or Soc 1101	3
English 1110 First Year English Composition.....	3	Social Science 2: AED Econ 2201 or Econ 2001	3
Writing Level 2 (2367) (see approved CFAES list)	3	Historical Study (see approved CFAES list)	3
Agr Comm 3130 or Comm 2110 Speech.....	3	Culture & Ideas or Historical Study (see approved CFAES list)	3
Math 1148 College Algebra	4	Literature (see approved CFAES list)	3
Data Analysis ¹	3	Art (see approved CFAES list).....	3
Entomology 1111 Biology of Orgsms Affecting Bldgs ..	4	Total GEC: 52	
Physics 1200 Mechanics, Kinematics, Fluids,Waves ..	5		
Earth Science 1121 The Dynamic Earth.....	4		
ENR 3000/3001 Soil Science	4	Construction Sys Mgt Core	57
		Construction Management Supporting Courses	15 – 17
		Electives	4 - 6
		Total Credit Hours: 130	

¹Options: Com Ldr 3537, AED Econ 2005, An Sci 2260, H&CS 2260, ENR 2000, Stat 1450

1. Construction Systems Management Core

CSM 1205	Intro to Construction Management	3
CSM 2240	Construction Materials & Methods I	3
CSM 2241	Construction Materials & Methods II	3
CSM 2305	Professional Development I	2
CSM 2310	Electrical & Lighting Systems for Bldgs	3
CSM 2345	Mechanical Systems for Buildings	3
CSM 2440	Construction Surveying & Site Develop	4
CSM 2600	Construction Safety and Health	3
CSM 3450	Estimating	4
CSM 3451	Scheduling	4
CSM 3545	Structures for Construct Managers I	3
CSM 3546	Structures for Construct Managers II	3
CSM 4605	Professional Development II	1
CSM 4641	Construction Project Management	2
CSM 4642	Construction Contracts & Documents	3
CSM 4660	Heavy Construction Management	3
CSM 4900	Construction Management Capstone	3
CSE 1112	Computer Assisted Problem Solving	3
Engr 1121	Graphics Presentations I	2
CSM 3191	Internship	2
		57

Technical Electives (Choose one if the total credit hours under the 5 categories marked with "*" is equal to 15)

CSM 5670	Green Bldg and Sustainable Constr	3
CSM 5680	Constr Renovation and Demolition	3
CE 5810	Constr. Safety and Forensics	3
CE 5820	Construction estimating	3
City 5001	Introduction to GIS	4

2. Construction Management Supporting Courses

15-17

Principles of Management *(Choose one)		
AED Econ 3101	Principles of Agribusiness Management	3
BUS-MHR 3100	Foundations of Management and HR	3
Accounting *(Choose one)		
AED Econ 2105	Managerial Records and Analysis	3
Acct & MIS 2200	Introduction to Accounting I	3
Acct & MIS 2000	Foundations of Accounting	3
Business Law *(Choose one; Bus-Fin 3500 & 4510 equal one course)		
AED Econ 3170	Agricultural Law	3
Bus-Fin 3500 & 4510 (both req'd)	Legal Environment of Business	1.5
	Legal Business Issues	1.5
Finance *(Choose one)		
AED Econ 3103 ¹	Principles of Agribusiness Finance	3
BUS-FIN 3120 ²	Foundations of Finance	3
ISE 2040	Engineering Economic Analysis	2
Human Resources *(Choose one)		
AED Econ 3160	Human Resource Mgt in Small Business	2
BUS-MHR 3300	Managing Human Resources	3
Com Ldr 3530	Foundations of Pers and Prof Leadership	3
Com Ldr 4430	Leadership in Teams and Community Org	3
Business Electives (Choose one if the total credit hours under the 5 categories marked with "*" is less than 15)		
Acct & MIS 2300	Introduction to Accounting II	3
AED Econ 3102	Principles of Agribusiness Marketing	3
AED Econ 3121	Salesmanship in Agriculture	2
BUS-FIN 3290	Foundations of Entrepreneurial Finance	3
BUS-FIN 3400	Introduction to Real Estate	3
BUS-FIN 4412	Real Estate Law	3
BUS-M&L 3150	Foundations of Marketing	3
BUS-M&L 3241	Intro to Entrepreneurial Marketing	
BUS-MGT 3130	Foundations of Operations Management	3
BUS-MHR 2000	Introduction to International Business	1.5
BUS-MHR ^{3510.01}	New Venture Creation	3
BUS-MHR 3520	Leading High-Performance Ventures	3

¹Prerequisite: Acct & MIS 2200

²Prerequisite: Acct & MIS 2000

G. Approved GE List

COLLEGE OF FOOD, AGRICULTURAL, AND ENVIRONMENTAL SCIENCES GENERAL EDUCATION REQUIREMENTS 8/02/2012

GENERAL COLLEGE REQUIREMENTS

- A minimum of 121 total credit hours. (English 1109; Educ T & L 1001, 1002, 1003, 1004, 1005, 1006, 1007, 1010; Mathematics 1040, 1050, 1073, 1074, 1075; do not count toward the 121-hour minimum requirement for the BS.)
- **ALL STUDENTS MUST COMPLETE TWO GLOBAL ISSUES COURSES**, designated with a triangle (▲).
- Students are encouraged to participate in a study abroad. Application of credits toward the degree is approved by the Assistant Dean, Academic Affairs.
- A minimum of 36-43 hours in the major with at least 12 hours taken from the department offering the major at OSU in the baccalaureate program.
- Courses in the major may **not** be taken pass/non-pass.
- Course work may include a maximum of four hours of physical activity courses (all 1139-1197 courses), and a maximum of 4 credit hours of campus music organizations.
- A minimum of 30 semester hours of credit earned through regular course enrollment at this University, and regular course enrollment in the last quarter in the College of Food, Agricultural, and Environmental Sciences.
- A cumulative point-hour ratio of at least **2.00** on **all** course work completed at The Ohio State University as well as at least a 2.00 in the **major** and **minor**.
- A college maximum of six hours of individual studies courses (x193) can be applied toward graduation although some majors may have a lower maximum.
- An internship of 1-2 hours is required. Any hours above two hours must count against the major. A college maximum of six hours of internship credit can be applied toward graduation although some majors may have a lower maximum.
- A maximum of three credits of 3488 can be applied toward graduation although some majors may have a lower maximum. A 2.0 is required to register for 3488 credit.
- Credit hours for 4999 ("with Research Distinction") and 4999H ("with Honors Research Distinction") are repeatable to maximum of six hours.
- A maximum of one course may overlap between **major** courses and the GE (second writing, natural sciences, history, arts, literature, cultures and ideas, social sciences, and contemporary issues).
- A maximum of one course may overlap between the **minor** and the GE (second writing, natural sciences, history, arts, literature, cultures and ideas, social sciences, and contemporary issues).
- An application for degree must be filed in the College Office at least two semesters prior to the granting of the degree.
 - Autumn Semester Graduation – 3rd week of previous Au Sem.
 - Spring Semester Graduation – 3rd week of previous Sp Sem.
 - Summer Semester Graduation – 3rd week of previous Su Sem.

GENERAL EDUCATION REQUIREMENTS

Second Writing (Select one - 3 hours)

Select one course from the following list.

African-American and African Studies 2367.01, 2367.04
 Agricultural Communication 2367
 Animal Science 2367
 Arabic 2367
 Art Education 2367.01, 2367.01H, 2367.02, 2367.03
 Communication 2367
 Comparative Studies 2367.02, 2367.04, 2367.07, 2367.08
 Dance 2367
 Economics 2367.01, 2367.02
 Education: T&L 2367
 Engineering 2367
 English 2367.01, 2367.02, 2367.03, 2367.04, 2367.05
 ENR 2367
 Film Studies 2367.01, 2367.02
 German 2367
 Hist Art 2367
 Human Development and Family Science 2367
 Landscape Architecture 2367
 Linguistics 2367.01, 2367.02
 Modern Greek 2367
 Nursing 2367
 Philosophy 2367
 Physics 2367
 Political Science 2367
 Psychology 2367
 Slavic Languages and Literatures 2367
 Sociology 2367.01H, 2367.02, 2367.03H
 Spanish 2367
 Theatre 2367.01, 2367.02, 2367.03
 Women's Gender & Sexuality Studies 2367.01, 2367.02, 2367.03, 2367.04

Yiddish 2367

Historical Survey (Select one - 3 hours)

African-American and African Studies 1121▲, 1122▲, 2080, 2081, 2085, 3080, 3081, 3082, 3083, 3086, 3089, 3308▲, 3320▲
 Classics 2301▲, 3202, 3215▲, 3401
 Consumer Sciences: Fashion & Retail Studies 2374
 Economics 4100, 4130▲, 4140▲
 Edu PAES 2210, 2211
 Engineering 2361, 2362
 History 1101▲, 1102▲, 1151, 1152, 1211▲, 1212▲, 1681▲, 1682▲, 2001, 2002, 2010, 2015, 2045, 2065, 2070, 2071, 2075, 2079, 2080, 2081, 2085, 2100▲, 2105▲, 2110▲, 2111, 2115, 2120▲, 2125▲, 2201, 2202▲, 2203▲, 2204, 2205▲, 2210▲, 2211, 2212, 2213, 2220▲, 2230▲, 2231▲, 2240▲, 2250▲, 2251, 2252▲, 2260, 2261, 2270, 2275▲, 2280, 2301, 2302, 2303, 2350, 2351, 2352, 2353, 2375, 2390, 2391, 2392, 2393, 2401▲, 2402▲, 2450▲, 2451, 2452, 2453, 2454, 2455, 2475, 2500▲, 2550, 2610, 2620▲, 2630, 2650, 2651▲, 2700▲, 2701, 2702▲, 2703▲, 2704▲, 2750, 2752, 2800, 3001, 3002, 3003, 3005, 3006, 3010, 3011, 3012, 3013, 3014, 3015, 3016, 3017, 3020, 3021, 3030, 3032, 3040, 3041, 3045, 3049, 3070, 3071, 3075, 3080, 3081, 3082, 3083, 3085, 3086, 3089, 3090, 3100, 3101, 3102, 3105, 3106, 3107, 3110, 3115▲, 3210, 3211, 3212, 3215▲, 3220, 3221, 3222, 3223, 3225, 3226, 3227▲, 3228▲, 3229, 3230, 3235, 3236, 3239, 3240, 3241, 3242▲, 3245, 3246, 3247▲, 3249, 3250, 3251, 3253, 3254, 3260, 3261, 3262, 3263, 3264, 3265, 3266, 3267, 3268, 3269, 3270, 3275▲, 3280, 3281, 3282, 3283, 3301▲, 3302▲, 3304, 3306▲, 3307▲, 3308▲, 3310▲, 3350, 3351, 3352, 3353▲, 3354, 3360, 3365, 3375, 3376, 3401, 3402, 3403, 3404, 3405, 3410, 3411▲, 3425, 3426, 3435▲, 3436▲, 3450, 3455, 3460, 3465, 3470, 3500, 3501, 3505▲, 3525, 3526, 3540, 3550▲, 3551, 3552, 3560, 3561, 3570, 3580, 3590, 3600, 3612, 3630, 3640, 3641, 3642, 3650, 3675▲, 3700, 3701, 3705, 3710▲, 3711, 3712, 3715, 3720▲, 3750▲
 History of Art 2001▲, 2002▲, 3301▲
 Int Sids 3350▲
 Jewish Studies 3460, 3465
 Philosophy 1101H▲, 1102H▲, 2660
 Women's Gender and Sexuality Studies 3322H, 4401

Literature (Select one - 3 hours)

African-American and African Studies 2251▲, 2281, 2367.01, 2367.04
 Arabic 2701▲, 2702▲, 2705
 Chinese 2451▲, 4401▲, 4402▲, 4403▲
 Classics 1101▲, 2220▲, 3203, 3402
 Comparative Studies 1100▲, 2101▲, 2102.01▲, 2102.02▲, 2103▲, 2104▲, 2105, 2301▲, 2864H▲, 3603▲, 3604▲, 3606▲, 3608▲
 Education T&L 2368, 3356
 English 2201▲, 2220▲, 2260, 2261, 2262, 2275, 2280, 2281, 2290, 2367.02, 3361, 3372
 French 1801▲, 2501, German 2251, 2252H▲, 2253▲, 3252▲, 4252
 Hebrew 2700▲, 2702▲, 2703▲, 2704▲, 2708▲
 Italian 2051▲, 2052▲, 2054
 Japanese 2451▲, 2452▲
 Korean 2451▲
 Modern Greek 2500H, 3710▲
 Near Eastern Languages and Cultures 3702▲, 3704▲
 Persian 2301▲, 2701▲, 2704
 Philosophy 2120▲, 3210▲, 3220▲, 3230▲, 3240▲, 3250▲, 3261, 3262▲
 Portuguese 2150▲, 2159▲
 Russian 2250▲
 Scandinavian 3350▲, 4250
 Slavic Languages and Literature 2345▲
 Spanish 2320▲, 2321▲, 2520▲
 Theatre 2367.02
 Turkish 2701▲
 Women's Gender and Sexuality Studies 2215, 2367.01, 2367.02, 2367.03, 3372▲
 Yiddish 3371▲, 3399▲

Arts (Select one - 3 hours)

African-American and African Studies 2288, 3376, 4571
 Architecture 5610
 Art 2100, 2300, 2502, 2555, 3201H
 Art Education 1600, 2367.01, 2520
 Chinese 4405▲
 Comparative Studies 3607▲, 3686
 East Asian Lang and Lit 3446
 English 2263, 2269
 Film Studies 2270, 2271
 French 2801
 Hebrew 2205, 2245
 History of Art 2001▲, 2002▲, 2003▲, 2101▲, 2367, 2901▲, 3001, 3002▲, 3005, 3101, 3211, 3521▲, 3601▲, 3603▲, 3605, 3611, 3635, 3901, 4121▲, 4421▲, 4605, 4630, 4810▲, 4820▲
 Italian 2053▲, 2055
 Korean 5405
 Landscape Architecture 2600
 Modern Greek 2680▲

Music 2250▲, 2251▲, 2252, 2253, 2288, 3341, 3342, 3345, 3347▲, 3348▲, 3349
 Philosophy 2450, 2470H
 Physics 3201H
 Portuguese 2335
 Russian 3460▲
 Scandinavian 4450▲
 Slavic Languages and Culture 3320▲, 3360▲
 Spanish 2322▲, 2330▲, 2380▲
 Theatre 2100, 2341H, 2811
 Women's Gender and Sexuality Studies 2230, 3317
Cultures and Ideas (Select one - 3 hours)
 African-American and African Studies 3342H▲, 5485.01▲
 Allied Medicine 2530
 Anthropology 2241▲
 Arabic 2241▲, 2367, 3301▲
 Art Education 2550
 ARTSSCI 2400, 4870
 Chinese 2231▲, 2232▲
 Classics 2201▲, 2202▲, 2203▲, 2204▲, 2205, 2301▲, 3202
 Community Leadership 3535
 Comparative Studies 2220▲, 2264, 2265, 2281, 2321, 2322, 2340▲, 2341▲, 2343▲, 2350, 2360, 2367.04, 2367.07, 2367.08, 2370▲, 2670, 3302▲, 3620, 3645▲, 3646, 3657▲, 3676▲, 3677, 3689▲
 Dance 3401
 East Asian Languages and Literature 1231▲, 3241▲
 Economics 4100
 Education Policy & Leadership 3410
 English 1167H, 2264, 2270, 2271, 2276, 2277, 2282, 3364, 3378
 ENR 3470
 French 1802, 1803, 3801
 German 2352▲, 3253, 3351▲, 3451H▲
 Hebrew 2209, 2210▲, 2216▲, 2241▲
 History of Art 3301▲, 4701
 History 2079, 2210▲, 2450▲
 Japanese 2231▲
 Jewish Studies 2201▲, 2516▲
 Korean 2231▲
 Landscape Architecture 2367
 Linguistics 2000, 2601, 2901
 Medieval and Renaissance Studies 2211▲, 2212▲, 2215▲, 2217▲, 2510▲, 2513▲, 2514▲, 2516▲, 2520, 2526▲, 2618▲, 2666▲
 Modern Greek 2000▲, 2100▲, 2240H, 2410▲
 Near Eastern Languages and Cultures 2200▲, 2241▲, 2244▲, 3101, 3201, 3204▲, 3205▲, 3501▲, 3508, 3620, 3700▲
 Persian 2241▲
 Philosophy 1100, 1300, 1332, 1850, 2400, 2860, 3420
 Portuguese 2330▲, 2331▲
 Russian 2335▲
 Slavic Languages and Cultures 2230▲
 Spanish 2150▲, 2151▲, 2242, 2331▲, 2332▲
 Turkish 2241▲
 Women's Gender and Sexuality Studies 1110, 2282
 Yiddish 2241▲, 2367
Contemporary Issues (Select one- 3 Hours)
 AED Econ 4597.01
 Animal Sciences 4597
 Anthropology 4597.01, 4597.02, 4597.03H, 4597.04, 4597.05H
 City and Regional Planning 4597
 Classics 4597
 Communications 3597.01▲, 3597.02▲
 Comparative Studies 4597.01▲, 4597.02▲, 4597.03▲
 Econ 4597.01
 English 3597.03, 4597.01, 4597.02, 4597.04H
 ENR 4597.02
 Food Science & Technology 4597.01, 4597.02
 Geography 3597.01, 3597.02, 3597.03
 International Studies 4597.01, 4597.02
 Landscape Architecture 3597
 Linguistics 4597.01, 4597.02
 Plant Pathology 4597
 Political Science 4597.01, 4597.02, 4597.03
 Portuguese 4597.01▲, 4597.02▲
 Psychology 4597.01▲, 4597.02▲
 Social Work 3597
 Sociology 3597.01, 3597.02
 Theatre 3597
 Women's Gender and Sexuality Studies 4597

H. DARwin Interactive Audit

PREPARED: 11/02/10 - 15:09

04139212

PROGRAM CODE: CONSYM-BSC

CATALOG YEAR: 99993

BACHELOR OF SCIENCE IN CONSTRUCTION SYSTEMS MANAGEMENT

▼ Open All Sections ▶ Close All Sections

AT LEAST ONE REQUIREMENT HAS NOT BEEN SATISFIED

▼ ***** GEC CURRICULUM *****

THIS DEGREE AUDIT REPORT SHOULD BE READ IN CONJUNCTION WITH AN UP-TO-DATE VERSION OF THE FOOD, AGRICULTURAL, AND ENVIRONMENTAL SCIENCES CURRICULUM SHEET FOR THE BACHELOR OF SCIENCE DEGREE UNDER THE GENERAL EDUCATION CURRICULUM.

AN APPLICATION FOR DEGREE MUST BE ON FILE IN THE COLLEGE OFFICE AT LEAST TWO QUARTERS PRIOR TO THE GRANTING OF THE DEGREE.

AUTUMN QUARTER - 3RD WEEK OF WINTER QUARTER
WINTER QUARTER - 3RD WEEK OF SPRING QUARTER
SPRING QUARTER - 3RD WEEK OF AUTUMN QUARTER
SUMMER QUARTER - 3RD WEEK OF WINTER QUARTER

THE APPLICATION TO GRADUATE CAN BE ACCESSED FROM THE FOLLOWING WEBSITE:
HTTP://CPAES.OSU.EDU/CURRENT-STUDENTS/ACADEMICS-ADVISING/
GRADUATION-COMMENCEMENT

▼ **✗ GENERAL GRADUATION REQUIREMENTS**
(MINIMUM 185 HOURS)

EARNED: 157 HOURS
IN-PROGRESS 18 HOURS
--> NEEDS: 10 HOURS

R A MINIMUM 2.0 GPA IS REQUIRED IN ALL UNIVERSITY COURSES
(170 HOURS TAKEN) 3.231 GPA

FAILED COURSES AND COURSES REPEATED UNDER THE FRESHMAN FORGIVENESS POLICY. THESE COURSES DO NOT COUNT TOWARD YOUR DEGREE PROGRAM.

AUD6 PSYCH	100	0.0	#D	WID7 MATH	148	0.0	#D
WID6 PSYCH	100	0.0	BN				

R 45 HOUR O.S.U. RESIDENCY REQUIREMENT - COMPLETED
(170 HOURS TAKEN)

R AT LEAST 155 HOURS WHICH ARE NOT TAKEN PASS/NONPASS
(175 HOURS TAKEN)

* INDIVIDUALIZED STUDY COURSES - 10 CREDIT LIMITATION
SP10 CONSYMT 693 3.0 B

* INTERNSHIP PROGRAMS IN MAJOR - 6 CREDIT LIMITATION
WID10 CONSYMT 489 3.0 A

* OTHER COURSES COUNTING TOWARD TOTAL HOUR REQUIREMENT
169 HOURS ADDED

▼ **✓ FOUNDATIONS**

EARNED: 24 HOURS

WID7 ENGLISH 110.01 5.0 B

SP09 COMM 367 5.0 B

SP09 AGRCOMM 390 5.0 A

AUD7 MATH 148 4.0 C-

AUD9 ABE 387 5.0 A

▼ **✗ NATURAL SCIENCE**
COMPLETE A MINIMUM OF FIVE COURSES.

EARNED: 15 HOURS

R PHYSICS - COMPLETED
WID9 PHYSICS 111 5.0 KC C80C : PHY8117

R BIOLOGICAL SCIENCE - COMPLETED
SP07 BIOLOGY 101 5.0 C+

-R **NATURAL SCIENCE SEQUENCE - CHOOSE ONE SEQUENCE**
 SP07 BIOLOGY 101 5.0 C+
 FROM: BIOLOGY 102, 113, 114, H115, H116
 CHEM 101, 102, 121(R), 122, 125 EARTHSCI 121(R),
 EARTHSCI 203, 210 PHYSICS 111(R), 112 ARCH 426
 PHYSICS 131, 132

-OR **NATURAL SCIENCE SEQUENCE - CHOOSE EARTHSCI 121,
 ENR 300.01, AND ENR 300.02**
 W109 EARTHSCI 121 5.0 C+
 FROM: ENR 300.01, 300.02

-R **ADDITIONAL SCIENCE - CHOOSE ONE OR TWO COURSES AS
 NEEDED TO COMPLETE A TOTAL OF 25 HOURS IN NATURAL
 SCIENCES.**
 W109 EARTHSCI 121 5.0 C+
 FROM: ANIMSCI 310 ANTHROP 200 PLNTBIO 101
 OR BIOLOGY 101 OR 113 OR 115 PLNTBIO 102 OR
 BIOLOGY 102 OR 114 OR 116 ENTOMOL 101, 102
 EEOB 232, 235 ENR 201 FDSCTE 201 HCS 200,
 HCS 300 HUMNTR 210 MICRBIOL 509 PLNTBIO 300
 CHEM 101 OR 121 OR 201, 102 OR 122 OR 202 OR
 CHEM 125, 123 OR 203 ENR 300.01 & 300.02
 EARTHSCI 122, 203, 210 MATH 151.01 PHYSICS 112
 OR 132, 133

✓ **INTERNATIONAL ISSUES**
 ALL STUDENTS MUST COMPLETE TWO INTERNATIONAL ISSUES
 COURSES, ONE OF WHICH MUST BE A NON-WESTERN OR GLOBAL
 COURSE (DESIGNATED ON THE CURRICULUM SHEET WITH AN
 ASTERISK). THE OTHER MAY BE AN ADDITIONAL NON-WESTERN
 COURSE, OR A WESTERN (NON-US) COURSE (DESIGNATED ON THE
 CURRICULUM SHEET WITH A DIAMOND).

IP EARNED: 5 HOURS
 IN-PROGRESS 5 HOURS

AU07 GEOG 240 5.0 B
 AU10 COMM 597.01 5.0 IP>I

✓ **SOCIAL SCIENCE**

AU06 SOCIOL 101 5.0 B+
 AU08 AEDECON 200 5.0 C+
 AU07 GEOG 240 5.0 B

✓ **HISTORY**
 COMPLETE ONE COURSE FOR AT LEAST 4 HOURS.

SP07 HISTORY 151 5.0 C

✓ **ARTS AND LITERATURE**
 COMPLETE TWO COURSES FOR AT LEAST EIGHT HOURS.

SP08 FABENG 697 8.0 A
 AU06 MUSIC 252 5.0 B+

✓ **UNIVERSITY RESOURCES AND PROCEDURES**

EARNED: 1 HOUR

AU06 USAS 100.21 1.0 A+

✗ **AGRIBUSINESS MINOR**
 COMPLETE AT LEAST 21 HOURS AND EARN A 2.0 GRADE POINT
 AVERAGE OVERALL

EARNED: 9 HOURS 2.866 GPA
 IN-PROGRESS 8 HOURS

AGRICULTURAL ECONOMICS - COMPLETED
 1 COURSE TAKEN
 W109 AEDECON 401 4.0 B+

AGRICULTURAL ECONOMICS - COMPLETED
 1 COURSE TAKEN

W110 AEDECON 402 5.0 B

- ACCOUNTING - TAKE THIS COURSE
FROM: ACCTMIS 211 AEDECON 412

REQUIRED ELECTIVES - COMPLETED
8 HOURS ADDED
AU10 AEDECON 421 3.0 IP>I AU10 AEDECON 532 5.0 IP>I

X CONSTRUCTION SYSTEMS MANAGEMENT MAJOR

R YOUR MAJOR GPA IS:
3.707 GPA

-R A MINIMUM OF 100 HOURS IS REQUIRED IN THE MAJOR.
66 HOURS ADDED

-R CONSTRUCTION SYSTEMS CORE - TAKE ALL COURSES
12 COURSES TAKEN
AU08 CONSYSMT 240 4.0 B+ AU08 CONSYSMT 305 4.0 A
SP09 CSE 105 4.0 B SP09 CONSYSMT 345 4.0 A
SU09 CONSYSMT 310 4.0 B+ W110 CONSYSMT 600 3.0 A
W110 CONSYSMT 540 4.0 A W110 CONSYSMT 489 3.0 A
W110 CONSYSMT 605 2.0 A SP10 CONSYSMT 641 3.0 A
SP10 CONSYSMT 642 3.0 A SP10 CONSYSMT 670 3.0 A
FROM: CONSYSMT 541, 643, 660

R CONSTRUCTION SYSTEMS CORE: GRAPHICS - COMPLETED
1 GROUP TAKEN
AU09 ENGRAFH 121 3.0 B-

R CONSTRUCTION SYSTEMS CORE - COMPLETED
1 GROUP TAKEN
SU09 CONSYSMT 440 5.0 A-

R CONSTRUCTION SYSTEMS CORE: STRUCTURES - COMPLETED
2 COURSES TAKEN
SU09 CONSYSMT 545 4.0 B+ SU09 CONSYSMT 546 4.0 A

R CONSTRUCTION SYSTEMS CORE - TAKE CONSYSMT 241 AND 441.
W109 CONSYSMT 241 4.0 A AU09 CONSYSMT 441 5.0 A-

CONSTRUCTION MANAGEMENT SUPPORTING COURSES:

-R PRINCIPLES OF MANAGEMENT - CHOOSE ONE COURSE
FROM: AEDECON 401 BUSMHR 400

-R ACCOUNTING - CHOOSE ONE COURSE
FROM: ACCTMIS 211, 310 AEDECON 412

-R BUSINESS LAW - CHOOSE ONE COURSE
FROM: AEDECON 470 BUSFIN 510 ENR 752

-R FINANCE - CHOOSE ONE COURSE
FROM: AEDECON 403 BUSFIN 420 ISE 504

-R HUMAN RESOURCES - CHOOSE 1 COURSE
FROM: AEDECON 460 BUSMHR 660

-R OTHER BUSINESS TOPICS - CHOOSE 1 COURSE
ADDITIONAL ONES MAY COUNT TOWARD FREE ELECTIVE HOURS
FROM: ACCTMIS 212 AEDECON 402, 421
BUSADM 555 BUSFIN 590, 670, 775 BUSML 450, 490
BUSMGT 430 BUSMHR 390, 490, 590, 704

ELECTIVE COURSE WORK UNUSED TOWARD SPECIFIC PROGRAM REQUIREMENTS

EARNED: 9 HOURS
IN-PROGRESS 5 HOURS
SP10 CONSYSMT 493 3.0 S
W108 EDUPAES 103 3.0 A- W108 EDUPAES 204 3.0 A-
AU10 AFAMAST 251 5.0 IP>I

CURRENT QUARTER SCHEDULE

IN-PROGRESS 18 HOURS
AU10 AFAMAST 251 5.0 IP>I AU10 AEDECON 421 3.0 IP>I
AU10 AEDECON 532 5.0 IP>I AU10 COMM 597.01 5.0 IP>I

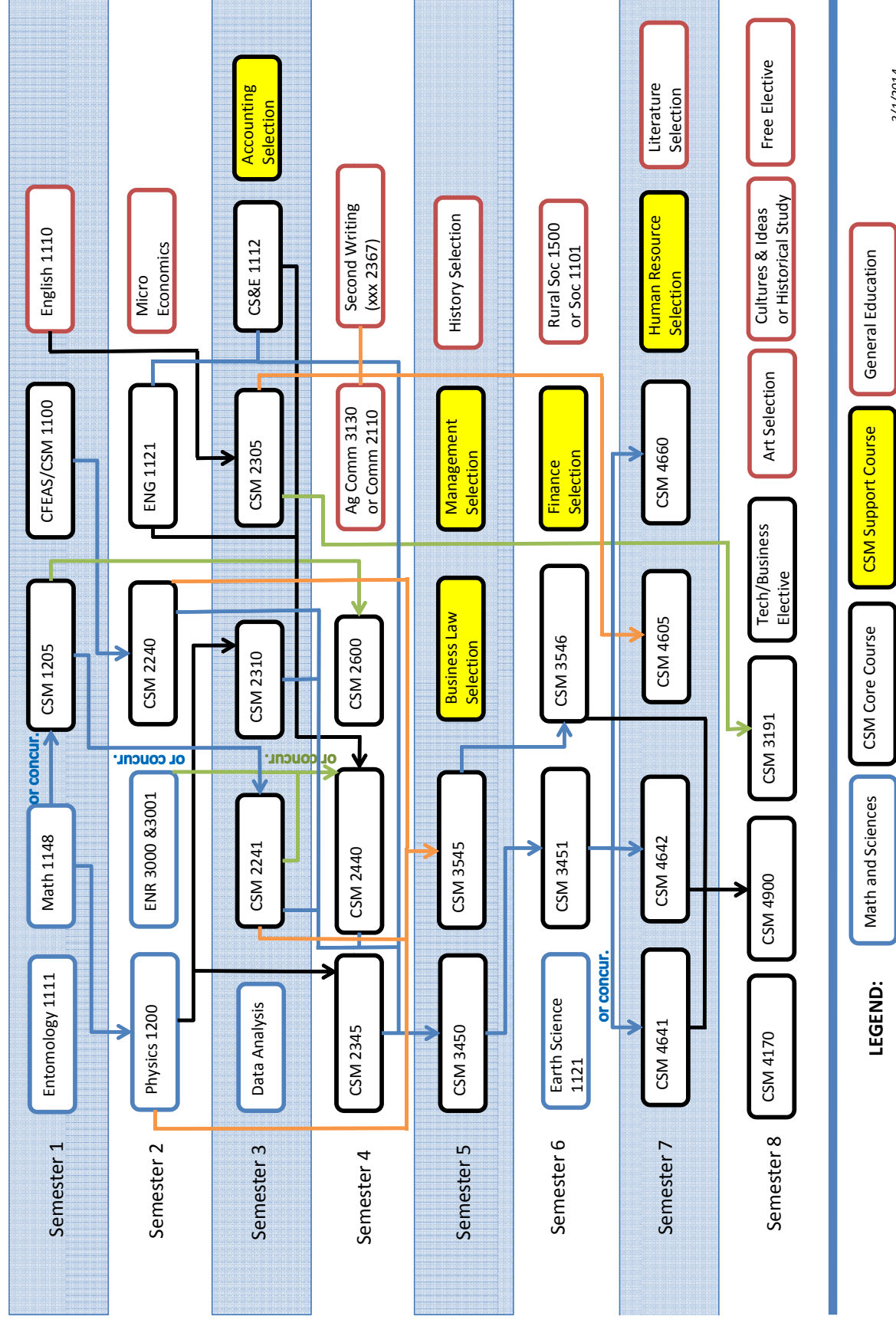
I. Course Matrix

at
The Ohio State University

Ohio State University - Self Study for ACCE June 19, 2014

J. CSM Program Course Sequence and Prerequisites

Flow chart of the prerequisite structure for the Construction Systems Management degree (BS in CSM) under SEMESTERS



3/1/2014

K. Internship Evaluation Forms



Student _____

Company _____

PROFESSIONAL APPEARANCE	Outstanding	Very Good	Satisfactory	Marginal	Unsatisfactory
Business professional dress (collared shirt and tie required; jacket optional)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Well groomed, neat, clean, looks professional	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
DESIGN/ QUALITY OF SLIDES	Outstanding	Very Good	Satisfactory	Marginal	Unsatisfactory
Visually appealing—emphasis on images and limited text	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Bold, sharp, crisp images used	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Effective use of color—high degree of contrast between text and background	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Consistent format throughout presentation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The product reflects planning, not rushing, in its preparation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Free of grammatical errors and spelling errors	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PRESENTATION SKILLS	Outstanding	Very Good	Satisfactory	Marginal	Unsatisfactory
Introduction grabs audience's attention and informs them of the purpose	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Slides/visuals complement the speaker's points (not used as notes for speaker)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Student addresses all members of the audience and makes eye contact with audience	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Evidence of YOU ATTITUDE—focused on audience's needs and how information will benefit the audience	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Clear introduction, body and conclusion	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CONTENT— During the presentation the student effectively communicates:	Outstanding	Very Good	Satisfactory	Marginal	Unsatisfactory
How they found their internship	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Major tasks and duties	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Significant learning experiences and accomplishments	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Recommendations for fellow students	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
OVERALL QUALITY	Outstanding	Very Good	Satisfactory	Marginal	Unsatisfactory
Overall quality and effectiveness of presentation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

COMMENTS:



Student _____ Company _____

PROFESSIONAL APPEARANCE	Outstanding	Very Good	Satisfactory	Marginal	Unsatisfactory
Business professional dress (collared shirt and tie required; jacket optional)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Well groomed, neat, clean, looks professional	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
VISUAL DISPLAY	Outstanding	Very Good	Satisfactory	Marginal	Unsatisfactory
Visually appealing poster tri-fold OR self running PowerPoint/Prezzi	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Bold, sharp, crisp images used	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Captions/verbiage to explain images	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Effective use of color	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Consistent format and design	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Brochures, hand-outs, or other materials used	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PROFESSIONAL NETWORKING CONDUCT	Outstanding	Very Good	Satisfactory	Marginal	Unsatisfactory
Shares knowledge and relays information about internship in a professional manner	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Answers questions and provides information to fair participants	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Demonstrates the ability to network face-to-face	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
OVERALL QUALITY	Outstanding	Very Good	Satisfactory	Marginal	Unsatisfactory
Overall quality and effectiveness of presentation and student's ability to network with other students, faculty, and guests	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

COMMENTS:



Supervisor / Evaluator Information:

Name: _____

Company: _____

Title: _____

Phone: _____

Email: _____

Student Information:

Name: _____

OSU Email: _____

Major: _____

Rank: _____

Work Term: _____

Instructions: At the end of each work term, the student's immediate supervisor should evaluate the student, comparing him/her with other students of comparable academic level. We encourage you to discuss the evaluation (this form or a company form) with the student before the student returns to campus.

WORK PERFORMANCE

Please rate the student's work performance in each of the following areas: **[Outstanding]** Results achieved far exceed expectations for position and clearly moved the organization forward. Performance standouts as being exceptional **[Very Good]** Results exceed expectations for position and are clearly identifiable. Performance exceeds normal expectations **[Satisfactory]** Fully meets expectations for this position in all key areas. No major errors of execution or strategy. Performance is within the limits of what is normally required for this position **[Learning/Marginal]** Performance is typical of learning a new job, or performance is sufficient to fulfill some basic job duties but improvement, growth and development are expected for continued employment **[Unsatisfactory]** Level of performance is below minimum requirements for this position

	Outstanding	Very Good	Satisfactory	Learning/ Marginal	Unsatisfactory	Not Applicable
Attendance/Punctuality	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dependability	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Time management	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Judgment/Decision Making	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Relations with others	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Attitude/Application to work/learning	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Productivity	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Acceptance of Feedback	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Quality/Thoroughness of work	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Overall performance	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

What were the student's primary responsibilities/objectives this term?

How well did the student perform these responsibilities/objectives?

Were there any notable contributions from the student this term? Do you have suggestions for improvement/growth?

Is the student eligible for a return assignment?

☐ Yes ☐ No (why?)

This evaluation has been or will be discussed with the student?

☐ Yes ☐ No

Has a full-time offer been extended?

☐ Pending/NA ☐ Yes ☐ No

If offer was extended, what was the student's response?

☐ Pending/NA ☐ Accepted ☐ Declined



ACADEMIC PREPARATION

The Construction Systems Management program administrators would appreciate your input to help improve our curriculum. For each of the following ACCE learning outcomes, please rate the preparation of the student you supervise:

	Outstanding	Very Good	Satisfactory	Marginal	Unsatisfactory	Not Applicable
Ability to apply knowledge of mathematics and sciences	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ability to apply knowledge of industry practices	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ability to identify, evaluate and solve problems	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Understanding of professional and ethical responsibility	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Effective written communication skills	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Effective oral communication skills	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ability to function on multi-disciplinary teams	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Knowledge of contemporary issues/current events	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Recognizing the need for and having the ability to engage in professional development	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Understanding of business and financial aspects of professional practice	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ability to function in culturally and ethnically diverse environments	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ability to apply project management skills in office and field settings	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ability to use techniques, skills and knowledge in the construction industry as assigned	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ability to recognize and implement appropriate industry safety practices	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ability to perform quantitative surveys of material, equipment and labor (Estimate)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Knowledge of and understanding the interaction between components of a building or structure	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ability to read, interpret and understand contract documents	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ability to plan and schedule construction projects	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ability to use computing technology, including appropriate software	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Overall assessment of the student's academic preparation for this position	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

What curriculum changes (if any) would better prepare future students for employment with your company?

Signed _____ Date: _____

(Immediate Supervisor) please provide a business card

Thank you for taking the time to complete this form! Upon completion, please mail to W. Mac Ware, The Ohio State University, 590 Woody Hayes Drive, Columbus, Ohio 43210 or fax to 614-292-9448 or scan and email to ware.260@osu.edu.

L. Exit Survey for CSM Graduates

CSM Program Exit Survey SP14

1 With which gender do you self-identify?

- ☐ Male (1)
- ☐ Female (2)

2 What is your semester of graduation?

- ☐ Spring (1)
- ☐ Summer (2)
- ☐ Autumn (3)

3 Do you have a minor? (Enter minor in space provided)

- ☐ No (0)
- ☐ Yes (1) _____

4 Do you think your program met its objectives? CSM Program Objectives: 1. Plan and manage the construction of buildings and other infrastructure, and associated systems that meet all functional, safety, environmental, legal and economic requirements. 2. Follow the business principles and ethical practices necessary to build and maintain a viable company serving the construction industry. 3. Function effectively both as a team member and leader interacting successfully with clients, owners, government officials, the general public, and construction industry professionals from diverse ethnic and cultural backgrounds. 4. Become an accomplished professional in the construction industry who continuously updates his or her technical and management skills and serves relevant industry associations and organizations. 5. Contribute technical and management expertise to the improvement of local communities through active participation in community activities, organizations and charities.

- ☐ Yes (1)
- ☐ No (2)

5 Which CSM courses do you believe best prepared you for subsequent CSM courses? (Check all that apply)

- ☐ 205/1205 Intro. to Construction Management (1)
- ☐ 240/2240 Basic Metal Fabrication (2)
- ☐ 241/2241 Construction Methods and Materials (3)
- ☐ 3052305 Professional Development (4)
- ☐ 310/2310 Electrical and Lighting Systems for Buildings (5)
- ☐ 345/2345 Mechanical Systems for Buildings (6)
- ☐ 345/2345 Mechanical Systems for Buildings (7)
- ☐ 440/2440 Construction Site Development (8)
- ☐ 441, 540, 541/3450 Drawing, Estimating and Scheduling (9)
- ☐ 545/3545 Structures for Construction Managers (10)
- ☐ 546/3546 Structures for Construction Managers II (11)
- ☐ 600/2600 Construction Safety and Health (12)
- ☐ 605/4605 Professional Development II (13)
- ☐ 641/4641 Construction Project Management (14)
- ☐ 642/4642 Construction Control - Contracts and Documents (15)
- ☐ 643/4900 Construction Management Capstone (16)
- ☐ 660/4660 Heavy Construction Management (17)

6 Which CSM courses do you believe best prepared you for courses in other departments? (Check all that apply)

- ☐ 205/1205 Intro. to Construction Management (1)
- ☐ 240/2240 Basic Metal Fabrication (2)
- ☐ 241/2241 Construction Methods and Materials (3)
- ☐ 3052305 Professional Development (4)
- ☐ 310/2310 Electrical and Lighting Systems for Buildings (5)
- ☐ 345/2345 Mechanical Systems for Buildings (6)
- ☐ 345/2345 Mechanical Systems for Buildings (7)
- ☐ 440/2440 Construction Site Development (8)
- ☐ 441, 540, 541/3450 Drawing, Estimating and Scheduling (9)
- ☐ 545/3545 Structures for Construction Managers (10)
- ☐ 546/3546 Structures for Construction Managers II (11)
- ☐ 600/2600 Construction Safety and Health (12)
- ☐ 605/4605 Professional Development II (13)
- ☐ 641/4641 Construction Project Management (14)
- ☐ 642/4642 Construction Control - Contracts and Documents (15)
- ☐ 643/4900 Construction Management Capstone (16)
- ☐ 660/4660 Heavy Construction Management (17)

7 Please indicate which CSM courses need more hands-on experience. (Check all that apply)

- ☐ 205/1205 Intro. to Construction Management (1)
- ☐ 240/2240 Basic Metal Fabrication (2)
- ☐ 241/2241 Construction Methods and Materials (3)
- ☐ 3052305 Professional Development (4)
- ☐ 310/2310 Electrical and Lighting Systems for Buildings (5)
- ☐ 345/2345 Mechanical Systems for Buildings (6)
- ☐ 345/2345 Mechanical Systems for Buildings (7)
- ☐ 440/2440 Construction Site Development (8)
- ☐ 441, 540, 541/3450 Drawing, Estimating and Scheduling (10)
- ☐ 545/3545 Structures for Construction Managers (12)
- ☐ 546/3546 Structures for Construction Managers II (13)
- ☐ 600/2600 Construction Safety and Health (14)
- ☐ 605/4605 Professional Development II (15)
- ☐ 641/4641 Construction Project Management (16)
- ☐ 642/4642 Construction Control - Contracts and Documents (17)
- ☐ 643/4900 Construction Management Capstone (18)
- ☐ 660/4660 Heavy Construction Management (19)

8 Should there be more hands-on experiences?

- ☐ Yes (1)
- ☐ No (0)

9 Please list any topics you feel are lacking/missing from your major program.

The following section will cover advising. You will be asked about your experience with your faculty advisor, academic advisor, and other advisors.

10 Who is your FACULTY advisor?

- ☐ I was not aware I had a FACULTY advisor. (1)
- ☐ Dr. Mike Lichtensteiger (5)
- ☐ Dr. Victoria Chen (6)
- ☐ Eric Desmond (7)
- ☐ Lisa Johnson (8)
- ☐ Jeff Suchy (9)

11 How often did you meet with your FACULTY advisor for academic, career, or personal matters?

- ☐ Never (1)
- ☐ Once a year (2)
- ☐ Once a semester (3)
- ☐ Once a month (4)
- ☐ Once a week (5)
- ☐ More than once a week (6)

12 My FACULTY advisor's recommendations were helpful.

- ☐ Strongly Agree (4)
- ☐ Agree (3)
- ☐ Neither Agree nor Disagree (2)
- ☐ Disagree (1)
- ☐ Strongly Disagree (0)

13 How quickly could you arrange a meeting with your FACULTY advisor or receive an e-mail reply to your question for academic, career, or personal matters?

- ☐ Within one day (1)
- ☐ Within one week (2)
- ☐ Within two to three weeks (3)
- ☐ Within one month (4)
- ☐ In more than one month's time (5)

The ACADEMIC ADVISOR for all students in the Department of Food, Agricultural and Biological Engineering (ASM, CSM, and FBE) is Bev Barrick. Please answer the following questions in regards to your ACADEMIC ADVISOR.

14 How quickly could you arrange a meeting with the department's academic advisor for academic, career, or personal matters?

- ☐ Within one day (1)
- ☐ Within one week (2)
- ☐ Within two to three weeks (3)
- ☐ Within one month (4)
- ☐ In more than one month's time (5)
- ☐ Not applicable (6)

15 How often did you meet with the department's academic advisor for academic, career, or personal matters?

- ☐ Never (1)
- ☐ Once a year (2)
- ☐ Once a semester (3)
- ☐ Once a month (4)
- ☐ Once a week (5)
- ☐ More than once a week (6)

16 The advisor's recommendations were helpful.

- ☐ Strongly Agree (4)
- ☐ Agree (3)
- ☐ Neither Agree nor Disagree (2)
- ☐ Disagree (1)
- ☐ Strongly Disagree (0)

17 Please provide any further comments or suggestions that you believe would help us improve advising in the department.

The following section will cover the department's website.

18 Have you used the new departmental website (fabe.osu.edu), launched in October of 2012?

- ☐ Yes (1)
- ☐ No (2)

19 I have used the new departmental website to find or use the following: (Check all that apply)

- ☐ Curriculum Sheets (1)
- ☐ Graduation Information (2)
- ☐ Staff and/or faculty contact information (3)
- ☐ Research opportunities (4)
- ☐ Events in the department (5)
- ☐ Employment opportunities (6)
- ☐ Course information (7)
- ☐ To refer other students to the department (8)
- ☐ Other (9) _____

20 Please provide recommendations on how we can improve the departmental website.

The following section will cover the physical quality of the Agricultural Engineering Building.

21 Characterize the quality and maintenance of the department's laboratory equipment.

- ☐ Excellent (4)
- ☐ Very Good (3)
- ☐ Good (2)
- ☐ Fair (1)
- ☐ Poor (0)

22 Please rate the physical quality of the department's computer labs.

- ☐ Excellent (4)
- ☐ Very Good (3)
- ☐ Good (2)
- ☐ Fair (1)
- ☐ Poor (0)

23 Please rate the physical quality of the department's classrooms.

- ☐ Excellent (4)
- ☐ Very Good (3)
- ☐ Good (2)
- ☐ Fair (1)
- ☐ Poor (0)

24 Please rate the physical quality of the department's student lounge.

- ☐ Excellent (4)
- ☐ Very Good (3)
- ☐ Good (2)
- ☐ Fair (1)
- ☐ Poor (0)

The following section will cover your co-curricular experience.

25 How many internships have you completed?

- ☐ 0 (0)
- ☐ 1 (1)
- ☐ 2 (2)
- ☐ 3 (3)
- ☐ 4 (4)
- ☐ 5 or more (5)

26 It was easy finding an internship.

- ☐ Strongly Agree (4)
- ☐ Agree (3)
- ☐ Neither Agree or Disagree (2)
- ☐ Disagree (1)
- ☐ Strongly Disagree (0)

27 Please list the following information for your internship(s): Company name, length of internship, and overall level of satisfaction with the internship. Example: Internship 1: Brutus Buckeye Company; 4 months; extremely satisfied

28 Did you participate in a study abroad experience?

- ☐ Yes (1)
- ☐ No (2)

29 Please list the following information for your study abroad experience(s): Country visited, length of trip, name of program (if applicable), overall level of satisfaction, and brief description of program(s). Example: Study Abroad 1: Czech Republic; 6 weeks; Buckeyes Love Studying Abroad; extremely satisfied; we took one Czech language course at a local university and toured cities.

30 Did you participate in research?

- ☐ Yes (1)
- ☐ No (2)

31 Please list the following information for your research experience(s): Length of involvement, role in project, level of satisfaction, brief description of research. Example: Research 1: one year; research assistant to Dr. Carmen Ohio; extremely satisfied; researching the impact of survey results on future practices of the department.

32 Where you involved in any clubs, organizations, societies, or other extra-curricular groups?

- ☐ Yes (1)
- ☐ No (2)

33 Please list the following information for your extra-curricular group(s): Name of group; length of involvement; level of satisfaction. Example: Club 1: Buckeye Barbecue Club; four years; treasurer for two years; extremely satisfied

34 I found it easy to get involved in co-curricular activities (clubs, research, study abroad, etc.)

- ☐ Strongly Agree (1)
- ☐ Agree (2)
- ☐ Neither Agree nor Disagree (3)
- ☐ Disagree (4)
- ☐ Strongly Disagree (5)

35 Please comment on how the Department can better inform and assist students in becoming involved in co-curricular activities and experiences.

The following section will cover post-graduation information.

36 What are your current plans upon graduation?

- ☐ I plan on entering the workforce, but I don't have a job offer yet (1)
- ☐ Attending graduate or professional school (2)
- ☐ Volunteering or entering a public service program (Teach for America, Peace Corps, Army Corps of Engineers, etc.) (3)
- ☐ Other (4) _____
- ☐ I plan on entering the workforce, and I have a job offer (5)
- ☐ I will continue to work at the company with which I am currently employed (9)

37 Select the most appropriate choice for your situation.

- ☐ I will continue working for the company/organization I work for now (1)
- ☐ I start my job within 0 - 3 months from when I graduate (2)
- ☐ I start my job within 4 - 6 months from when I graduate (3)
- ☐ I start my job more than 6 months from when I graduate (4)

38 What is the name of the company with which you will be working post-graduation (please spell out acronyms)? Example: Buckeyes for a Better Tomorrow (BBT)

39 Will you be working for a company with which you had an internship or working (part-time or full-time) position as a student?

- ☐ Yes- internship (1)
- ☐ Yes- working position (1)
- ☐ No (0)

40 Where will you be attending graduate or professional school? (Please spell out acronyms)

41 What is your approximate starting salary?

- ☐ \$0 - \$9,999 per year (5000)
- ☐ \$10,000 - \$19,999 per year (15000)
- ☐ \$20,000 - \$29,999 per year (25000)
- ☐ \$30,000 - \$39,999 per year (35000)
- ☐ \$40,000 - \$49,999 per year (45000)
- ☐ \$50,000 - \$59,999 per year (55000)
- ☐ \$60,000 - \$69,999 per year (65000)
- ☐ \$70,000 - \$79,999 per year (75000)
- ☐ \$80,000 - \$89,999 per year (85000)
- ☐ \$90,000 - \$99,999 per year (95000)
- ☐ More than \$100,000 per year (105000)
- ☐ Other () _____

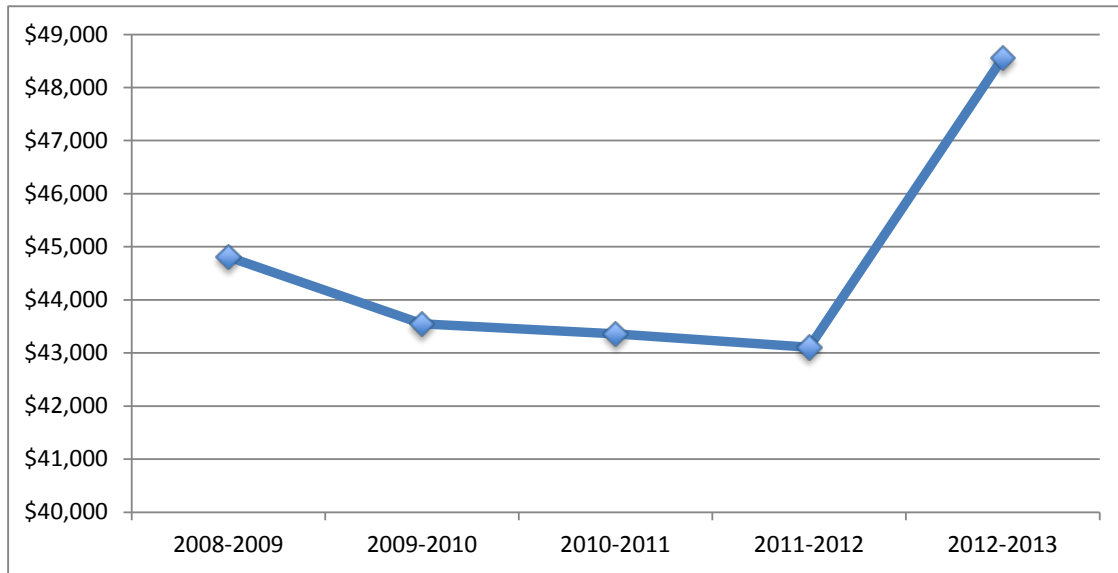
42 Please provide us with any other comments or feedback about your experience as a student in our department. Your feedback is vital to the continued improvement of the department.

43 Please provide us with an external e-mail address for future contact.

M. Results of Post-graduation Surveys

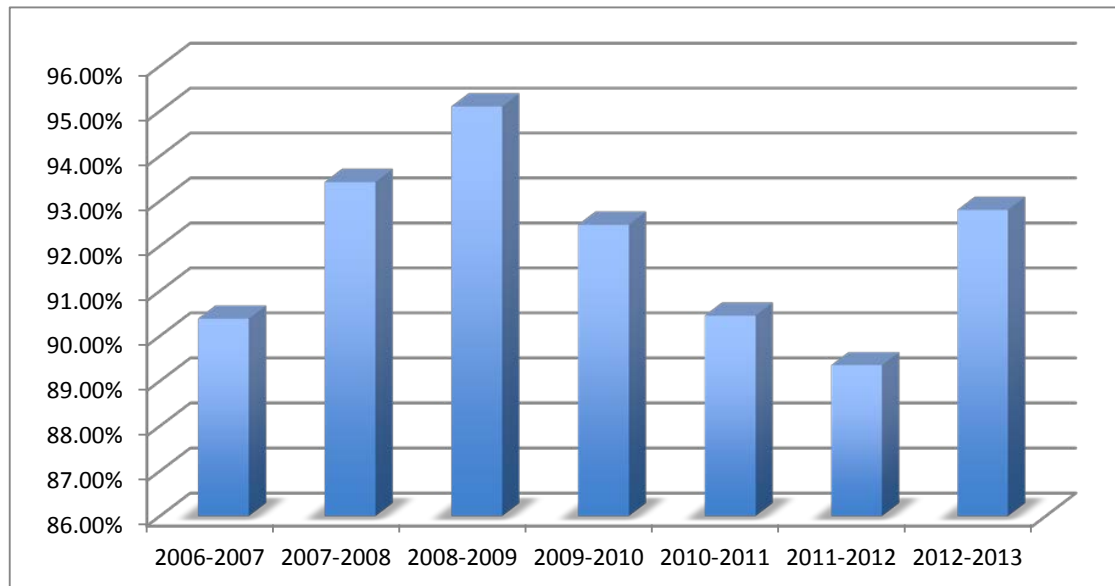
Average starting salary for CSM students

2008-2009	2009-2010	2010-2011	2011-2012	2012-2013
\$44,811	\$43,549	\$43,359	\$43,108	\$48,558



Post-graduation placement rate

2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013
90.38%	93.42%	95.10%	92.47%	90.45%	89.35%	92.80%



N. CSM Assessment Plan

Mission Statement: The mission of the CSM program parallels the FABE department mission and is “To advance the science and technology applied to construction for improving the lives of the people.”

Goal 1: Have the necessary knowledge and understanding for planning and managing construction projects

Methods: Means/Methods	1.1.1) CNSYSM 4900: final project on estimating and scheduling 1.2.1) CNSYSM 4642: construction contracts major project 1.3.1) CNSYSM 3191: internship employer evaluation Direct Measures: Final estimating and scheduling projects Major projects - construction contracts Internship - employer evaluations
Criteria	1.1.1 - 1.2.1 -&- 1.3.1) The minimal acceptable criterion for this outcome is 75% of students scoring 70% or higher on the identified assessment tasks for the measurement of achievement for this outcome. When 90% of the students obtain scores of 90% or higher on the selected assessment associated assignments, the performance standard constituting programmatic excellence for this learning outcome will be attained.
Planned Use	The FABE Academic Affairs Committee and course instructors will review the program, its supporting coursework, and the related assessment findings annually, on an ongoing basis, to formulate recommendations for incremental programmatic change. With the goal of improving learning, instruction, and curriculum, indicators from a summary report of the findings will be used to plan the incorporation of needed modifications. Accumulative findings for all program goals based on the contributing outcomes will be used as the cornerstone in the programmatic review cycle (every sixth year). Providing essential information for making strategic adjustments to this academic program, assuring continuous quality improvement.
Implementation Schedule	The data collection for the identified direct measures of the supporting learning outcomes will be conducted annually (or each semester affiliated course(s) is taught) starting AU-2012. In adherence to the CFAES Academic Program Assessment Plan Revision Cycle, this program will go through a comprehensive outcomes assessment review every six years. The college's cycle will be conducted “off-set,” by one year, to the university's Academic Program Review cycle conducted by the OSU Office of Academic Affairs. This plan links the timing of the periodic review of programmatic outcomes assessment to the six-year academic unit program review by having the review of assessment plans due the year prior to the unit program review. During the first year of implementation of a new (or re-envisioned) program assessment plan, focused attention will be given to refining the

	<p>measures used for assessing achievement; to assure alignment of identified assignments with outcomes. During this initial year of the plan, units may select to collect and report supporting data for half of the documented learning goals (or a minimum of three goals) within the plan. In the following year (year two), focused efforts exploring and reexamining appropriate measures for alignment with specific program learning outcomes will occur along with data collection and reporting the remainder of the program learning goals (those not addressed during the initial implementation year). During the third year of the college's comprehensive assessment plan revision cycle, in addition to collecting and reporting data for all program learning goals, academic units are encouraged to conduct faculty facilitated student, alumni, and/or stakeholder focus groups and/or surveys to aid in assessing success of learning outcomes, learning goals, and the program. For year four of the cycle, supporting data will be collected and reported for all program learning goals; upon conclusion of the academic year, units will craft and submit, to the college's Academic Affairs Committee an executive summary of findings based on the four years of Program Assessment Plan data collected. In the fifth year of the cycle units will continue collecting and reporting data for all program learning goals and will have a member of the instructional team review stated set of program learning goals to determine if modifications should be made in the forthcoming rendition of the program assessment plan. During year six, data collection and reporting for all program learning goals will continue; in addition, the unit will assemble and convene a formal programmatic assessment review team, comprised of faculty, staff, students, alumni, and stakeholders, to: review the accumulated findings from the assessment review cycle; appraise the achievement and success of the program; examine alignment of program learning goals and outcomes; and produce a summary of recommendations for program modifications and enhancement. The efforts of the team's comprehensive review of the individual Program Assessment Plan in "year six" will produce a "re-envisioned" plan.</p>
Evidence	
Met Minimum Criteria?	
Met Criteria for Excellence?	
Review of Findings	
Changes Made	
Assessment of Changes Made	
Next Steps	

Objective 1.1: *Develop a management plan for the construction of buildings and other infrastructure, which includes all associated systems*

Methods: Means/Methods	1.1.1) CNSYSM 4900: final project on estimating and scheduling Direct Measures: Final estimating and scheduling projects
Criteria	1.1.1) The minimal acceptable criterion for this outcome is 75% of students scoring 70% or higher on the identified assessment tasks for the measurement of achievement for this outcome. When 90% of the students obtain scores of 90% or higher on the selected assessment associated assignments, the performance standard constituting programmatic excellence for this learning outcome will be attained.
Planned Use	The unit's Academic Affairs Committee, faculty leadership of the B.S. in Construction Systems Management program of the Department of Food, Agricultural, and Biological Engineering, and course instructors will review the program, its supporting coursework, and the related assessment findings annually, on an ongoing basis, to formulate recommendations for incremental programmatic change. With the goal of improving learning, instruction and curriculum, indicators from a summary report of the findings will be used to plan the incorporation of needed modifications. Accumulative findings for all program goals based on the contributing outcomes will be used as the cornerstone in the programmatic assessment review cycle (as identified by the CFAES Academic Affairs Committee), providing essential information for making strategic adjustments to this academic program, assuring continuous quality improvement.
Implementation Schedule	The data collection for the identified direct measures of this learning outcome will be conducted annually (or each semester affiliated course(s) is taught) starting AU-2012. In adherence to the CFAES Academic Program Assessment Plan Revision Cycle, this program will go through a comprehensive outcomes assessment review every six years. The college's cycle will be conducted "off-set," by one year, to the university's Academic Program Review cycle conducted by the OSU Office of Academic Affairs. This plan links the timing of the periodic review of programmatic outcomes assessment to the six-year academic unit program review by having the review of assessment plans due the year prior to the unit program review. During the first year of implementation of a new (or re-envisioned) program assessment plan, focused attention will be given to refining the measures used for assessing achievement; to assure alignment of identified assignments with outcomes. During this initial year of the plan, units may select to collect and report supporting data for half of the documented learning goals (or a minimum of three goals) within the plan. In the following year (year two), focused efforts exploring and reexamining appropriate measures for alignment with specific program learning outcomes will occur along with data collection and reporting the remainder of the program learning goals (those not addressed during the initial implementation year). During the third year of the college's

	comprehensive assessment plan revision cycle, in addition to collecting and reporting data for all program learning goals, academic units are encouraged to conduct faculty facilitated student, alumni, and/or stakeholder focus groups and/or surveys to aid in assessing success of learning outcomes, learning goals, and the program. For year four of the cycle, supporting data will be collected and reported for all program learning goals; upon conclusion of the academic year, units will craft and submit, to the college's Academic Affairs Committee an executive summary of findings based on the four years of Program Assessment Plan data collected. In the fifth year of the cycle units will continue collecting and reporting data for all program learning goals and will have a member of the instructional team review stated set of program learning goals to determine if modifications should be made in the forthcoming rendition of the program assessment plan. During year six, data collection and reporting for all program learning goals will continue; in addition, the unit will assemble and convene a formal programmatic assessment review team, comprised of faculty, staff, students, alumni, and stakeholders, to: review the accumulated findings from the assessment review cycle; appraise the achievement and success of the program; examine alignment of program learning goals and outcomes; and produce a summary of recommendations for program modifications and enhancement. The efforts of the team's comprehensive review of the individual Program Assessment Plan in "year six" will produce a "re-envisioned" plan.
Evidence	
Met Minimum Criteria?	
Met Criteria for Excellence?	
Review of Findings	
Changes Made	
Assessment of Changes Made	
Next Steps	

Objective 1.2: *Assess the functional, safety, environmental, legal and economic requirements for a construction project*

Methods: Means/Methods	1.2.1) CNSYSM 4642: construction contracts major project Direct Measures: Major projects - construction contracts
Criteria	1.2.1) The minimal acceptable criterion for this outcome is 75% of students scoring 70% or higher on the identified assessment tasks for the measurement of achievement for this outcome. When 90% of the students obtain scores of 90% or higher on the selected assessment associated assignments, the performance standard constituting programmatic excellence for this learning outcome will be attained.
Planned Use	The unit's Academic Affairs Committee, faculty leadership of the

	<p>B.S. in Construction Systems Management program of the Department of Food, Agricultural, and Biological Engineering, and course instructors will review the program, its supporting coursework, and the related assessment findings annually, on an ongoing basis, to formulate recommendations for incremental programmatic change. With the goal of improving learning, instruction and curriculum, indicators from a summary report of the findings will be used to plan the incorporation of needed modifications. Accumulative findings for all program goals based on the contributing outcomes will be used as the cornerstone in the programmatic assessment review cycle (as identified by the CFAES Academic Affairs Committee), providing essential information for making strategic adjustments to this academic program, assuring continuous quality improvement.</p>
Implementation Schedule	<p>The data collection for the identified direct measures of this learning outcome will be conducted annually (or each semester affiliated course(s) is taught) starting AU-2012. In adherence to the CFAES Academic Program Assessment Plan Revision Cycle, this program will go through a comprehensive outcomes assessment review every six years. The college's cycle will be conducted "off-set," by one year, to the university's Academic Program Review cycle conducted by the OSU Office of Academic Affairs. This plan links the timing of the periodic review of programmatic outcomes assessment to the six-year academic unit program review by having the review of assessment plans due the year prior to the unit program review. During the first year of implementation of a new (or re-envisioned) program assessment plan, focused attention will be given to refining the measures used for assessing achievement; to assure alignment of identified assignments with outcomes. During this initial year of the plan, units may select to collect and report supporting data for half of the documented learning goals (or a minimum of three goals) within the plan. In the following year (year two), focused efforts exploring and reexamining appropriate measures for alignment with specific program learning outcomes will occur along with data collection and reporting the remainder of the program learning goals (those not addressed during the initial implementation year). During the third year of the college's comprehensive assessment plan revision cycle, in addition to collecting and reporting data for all program learning goals, academic units are encouraged to conduct faculty facilitated student, alumni, and/or stakeholder focus groups and/or surveys to aid in assessing success of learning outcomes, learning goals, and the program. For year four of the cycle, supporting data will be collected and reported for all program learning goals; upon conclusion of the academic year, units will craft and submit, to the college's Academic Affairs Committee an executive summary of findings based on the four years of Program Assessment Plan</p>

	data collected. In the fifth year of the cycle units will continue collecting and reporting data for all program learning goals and will have a member of the instructional team review stated set of program learning goals to determine if modifications should be made in the forthcoming rendition of the program assessment plan. During year six, data collection and reporting for all program learning goals will continue; in addition, the unit will assemble and convene a formal programmatic assessment review team, comprised of faculty, staff, students, alumni, and stakeholders, to: review the accumulated findings from the assessment review cycle; appraise the achievement and success of the program; examine alignment of program learning goals and outcomes; and produce a summary of recommendations for program modifications and enhancement. The efforts of the team's comprehensive review of the individual Program Assessment Plan in "year six" will produce a "re-envisioned" plan.
Evidence	
Met Minimum Criteria?	
Met Criteria for Excellence?	
Review of Findings	
Changes Made	
Assessment of Changes Made	
Next Steps	

Objective 1.3: *Demonstrate knowledge and understanding of construction industry principles and practices and apply them in industry related employment*

Methods: Means/Methods	1.3.1) CNSYSM 3191: internship employer evaluation Direct Measures: Internship - employer evaluations
Criteria	1.3.1) The minimal acceptable criterion for this outcome is 75% of students scoring 70% or higher on the identified assessment tasks for the measurement of achievement for this outcome. When 90% of the students obtain scores of 90% or higher on the selected assessment associated assignments, the performance standard constituting programmatic excellence for this learning outcome will be attained.
Planned Use	The unit's Academic Affairs Committee, faculty leadership of the B.S. in Construction Systems Management program of the Department of Food, Agricultural, and Biological Engineering, and course instructors will review the program, its supporting coursework, and the related assessment findings annually, on an ongoing basis, to formulate recommendations for incremental programmatic change. With the goal of improving learning, instruction and curriculum, indicators from a summary report of the findings will be used to plan the incorporation of needed modifications. Accumulative findings for all program goals based on the contributing outcomes will be used as the cornerstone in

	the programmatic assessment review cycle (as identified by the CFAES Academic Affairs Committee), providing essential information for making strategic adjustments to this academic program, assuring continuous quality improvement.
Implementation Schedule	<p>The data collection for the identified direct measures of this learning outcome will be conducted annually (or each semester affiliated course(s) is taught) starting AU-2012. In adherence to the CFAES Academic Program Assessment Plan Revision Cycle, this program will go through a comprehensive outcomes assessment review every six years. The college's cycle will be conducted "off-set," by one year, to the university's Academic Program Review cycle conducted by the OSU Office of Academic Affairs. This plan links the timing of the periodic review of programmatic outcomes assessment to the six-year academic unit program review by having the review of assessment plans due the year prior to the unit program review. During the first year of implementation of a new (or re-envisioned) program assessment plan, focused attention will be given to refining the measures used for assessing achievement; to assure alignment of identified assignments with outcomes. During this initial year of the plan, units may select to collect and report supporting data for half of the documented learning goals (or a minimum of three goals) within the plan. In the following year (year two), focused efforts exploring and reexamining appropriate measures for alignment with specific program learning outcomes will occur along with data collection and reporting the remainder of the program learning goals (those not addressed during the initial implementation year). During the third year of the college's comprehensive assessment plan revision cycle, in addition to collecting and reporting data for all program learning goals, academic units are encouraged to conduct faculty facilitated student, alumni, and/or stakeholder focus groups and/or surveys to aid in assessing success of learning outcomes, learning goals, and the program. For year four of the cycle, supporting data will be collected and reported for all program learning goals; upon conclusion of the academic year, units will craft and submit, to the college's Academic Affairs Committee an executive summary of findings based on the four years of Program Assessment Plan data collected. In the fifth year of the cycle units will continue collecting and reporting data for all program learning goals and will have a member of the instructional team review stated set of program learning goals to determine if modifications should be made in the forthcoming rendition of the program assessment plan. During year six, data collection and reporting for all program learning goals will continue; in addition, the unit will assemble and convene a formal programmatic assessment review team, comprised of faculty, staff, students, alumni, and stakeholders, to: review the accumulated findings from the assessment review</p>

	cycle; appraise the achievement and success of the program; examine alignment of program learning goals and outcomes; and produce a summary of recommendations for program modifications and enhancement. The efforts of the team's comprehensive review of the individual Program Assessment Plan in "year six" will produce a "re-envisioned" plan.
Evidence	
Met Minimum Criteria?	
Met Criteria for Excellence?	
Review of Findings	
Changes Made	
Assessment of Changes Made	
Next Steps	

Goal 2: Become familiar with and understand the business principles and ethical practices necessary in the construction and related industries

Methods: Means/Methods	2.1.1) CNSYSM 4641: project management planning group work 2.2.1) CNSYSM 3191: internship employer evaluation feedback 2.2.2) CNSYSM 4900: ethics and integrity final project group work 2.2.3) CNSYSM 4605: profession prospecting industry review project 2.3.1) CNSYSM 3191: internship business planning final report Direct Measures: Group work - project management planning Internship - employer evaluations Group work - ethics and integrity final projects Industry review projects - profession prospecting Internship - final business planning reports
Criteria	2.1.1 - 2.2.1 - 2.2.2 - 2.2.3 -&- 2.3.1) The minimal acceptable criterion for this outcome is 75% of students scoring 70% or higher on the identified assessment tasks for the measurement of achievement for this outcome. When 90% of the students obtain scores of 90% or higher on the selected assessment associated assignments, the performance standard constituting programmatic excellence for this learning outcome will be attained.
Planned Use	The FABE Academic Affairs Committee and course instructors will review the program, its supporting coursework, and the related assessment findings annually, on an ongoing basis, to formulate recommendations for incremental programmatic change. With the goal of improving learning, instruction, and curriculum, indicators from a summary report of the findings will be used to plan the incorporation of needed modifications. Accumulative findings for all program goals based on the contributing outcomes will be used as the cornerstone in the programmatic review cycle (every sixth year). Providing essential information for making strategic adjustments to this academic program, assuring continuous quality improvement.

Implementation Schedule	<p>The data collection for the identified direct measures of the supporting learning outcomes will be conducted annually (or each semester affiliated course(s) is taught) starting AU-2012. In adherence to the CFAES Academic Program Assessment Plan Revision Cycle, this program will go through a comprehensive outcomes assessment review every six years. The college's cycle will be conducted "off-set," by one year, to the university's Academic Program Review cycle conducted by the OSU Office of Academic Affairs. This plan links the timing of the periodic review of programmatic outcomes assessment to the six-year academic unit program review by having the review of assessment plans due the year prior to the unit program review. During the first year of implementation of a new (or re-envisioned) program assessment plan, focused attention will be given to refining the measures used for assessing achievement; to assure alignment of identified assignments with outcomes. During this initial year of the plan, units may select to collect and report supporting data for half of the documented learning goals (or a minimum of three goals) within the plan. In the following year (year two), focused efforts exploring and reexamining appropriate measures for alignment with specific program learning outcomes will occur along with data collection and reporting the remainder of the program learning goals (those not addressed during the initial implementation year). During the third year of the college's comprehensive assessment plan revision cycle, in addition to collecting and reporting data for all program learning goals, academic units are encouraged to conduct faculty facilitated student, alumni, and/or stakeholder focus groups and/or surveys to aid in assessing success of learning outcomes, learning goals, and the program. For year four of the cycle, supporting data will be collected and reported for all program learning goals; upon conclusion of the academic year, units will craft and submit, to the college's Academic Affairs Committee an executive summary of findings based on the four years of Program Assessment Plan data collected. In the fifth year of the cycle units will continue collecting and reporting data for all program learning goals and will have a member of the instructional team review stated set of program learning goals to determine if modifications should be made in the forthcoming rendition of the program assessment plan. During year six, data collection and reporting for all program learning goals will continue; in addition, the unit will assemble and convene a formal programmatic assessment review team, comprised of faculty, staff, students, alumni, and stakeholders, to: review the accumulated findings from the assessment review cycle; appraise the achievement and success of the program; examine alignment of program learning goals and outcomes; and produce a summary of recommendations for program modifications and enhancement. The efforts of the team's</p>
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	comprehensive review of the individual Program Assessment Plan in "year six" will produce a "re-envisioned" plan.
Evidence	
Met Minimum Criteria?	
Met Criteria for Excellence?	
Review of Findings	
Changes Made	
Assessment of Changes Made	
Next Steps	

Objective 2.1: *Apply knowledge of business and ethical practices to aspects of construction business components*

Methods: Means/Methods	2.1.1) CNSYSM 4641: project management planning group work Direct Measures: Group work - project management planning
Criteria	2.1.1) The minimal acceptable criterion for this outcome is 75% of students scoring 70% or higher on the identified assessment tasks for the measurement of achievement for this outcome. When 90% of the students obtain scores of 90% or higher on the selected assessment associated assignments, the performance standard constituting programmatic excellence for this learning outcome will be attained.
Planned Use	The unit's Academic Affairs Committee, faculty leadership of the B.S. in Construction Systems Management program of the Department of Food, Agricultural, and Biological Engineering, and course instructors will review the program, its supporting coursework, and the related assessment findings annually, on an ongoing basis, to formulate recommendations for incremental programmatic change. With the goal of improving learning, instruction and curriculum, indicators from a summary report of the findings will be used to plan the incorporation of needed modifications. Accumulative findings for all program goals based on the contributing outcomes will be used as the cornerstone in the programmatic assessment review cycle (as identified by the CFAES Academic Affairs Committee), providing essential information for making strategic adjustments to this academic program, assuring continuous quality improvement.
Implementation Schedule	The data collection for the identified direct measures of this learning outcome will be conducted annually (or each semester affiliated course(s) is taught) starting AU-2012. In adherence to the CFAES Academic Program Assessment Plan Revision Cycle, this program will go through a comprehensive outcomes assessment review every six years. The college's cycle will be conducted "off-set," by one year, to the university's Academic Program Review cycle conducted by the OSU Office of Academic Affairs. This plan links the timing of the periodic review of programmatic outcomes assessment to the six-year academic

	<p>unit program review by having the review of assessment plans due the year prior to the unit program review. During the first year of implementation of a new (or re-envisioned) program assessment plan, focused attention will be given to refining the measures used for assessing achievement; to assure alignment of identified assignments with outcomes. During this initial year of the plan, units may select to collect and report supporting data for half of the documented learning goals (or a minimum of three goals) within the plan. In the following year (year two), focused efforts exploring and reexamining appropriate measures for alignment with specific program learning outcomes will occur along with data collection and reporting the remainder of the program learning goals (those not addressed during the initial implementation year). During the third year of the college's comprehensive assessment plan revision cycle, in addition to collecting and reporting data for all program learning goals, academic units are encouraged to conduct faculty facilitated student, alumni, and/or stakeholder focus groups and/or surveys to aid in assessing success of learning outcomes, learning goals, and the program. For year four of the cycle, supporting data will be collected and reported for all program learning goals; upon conclusion of the academic year, units will craft and submit, to the college's Academic Affairs Committee an executive summary of findings based on the four years of Program Assessment Plan data collected. In the fifth year of the cycle units will continue collecting and reporting data for all program learning goals and will have a member of the instructional team review stated set of program learning goals to determine if modifications should be made in the forthcoming rendition of the program assessment plan. During year six, data collection and reporting for all program learning goals will continue; in addition, the unit will assemble and convene a formal programmatic assessment review team, comprised of faculty, staff, students, alumni, and stakeholders, to: review the accumulated findings from the assessment review cycle; appraise the achievement and success of the program; examine alignment of program learning goals and outcomes; and produce a summary of recommendations for program modifications and enhancement. The efforts of the team's comprehensive review of the individual Program Assessment Plan in "year six" will produce a "re-envisioned" plan.</p>
Evidence	
Met Minimum Criteria?	
Met Criteria for Excellence?	
Review of Findings	
Changes Made	
Assessment of Changes Made	
Next Steps	

Objective 2.2: *Employ professional and ethical practices*

Methods: Means/Methods	2.2.1) CNSYSM 3191: internship employer evaluation feedback 2.2.2) CNSYSM 4900: ethics and integrity final project group work 2.2.3) CNSYSM 4605: profession prospecting industry review project Direct Measures: Internship - employer evaluations Group work - ethics and integrity final projects Industry review projects - profession prospecting
Criteria	2.2.1 - 2.2.2 -&- 2.2.3) The minimal acceptable criterion for this outcome is 75% of students scoring 70% or higher on the identified assessment tasks for the measurement of achievement for this outcome. When 90% of the students obtain scores of 90% or higher on the selected assessment associated assignments, the performance standard constituting programmatic excellence for this learning outcome will be attained.
Planned Use	The unit's Academic Affairs Committee, faculty leadership of the B.S. in Construction Systems Management program of the Department of Food, Agricultural, and Biological Engineering, and course instructors will review the program, its supporting coursework, and the related assessment findings annually, on an ongoing basis, to formulate recommendations for incremental programmatic change. With the goal of improving learning, instruction and curriculum, indicators from a summary report of the findings will be used to plan the incorporation of needed modifications. Accumulative findings for all program goals based on the contributing outcomes will be used as the cornerstone in the programmatic assessment review cycle (as identified by the CFAES Academic Affairs Committee), providing essential information for making strategic adjustments to this academic program, assuring continuous quality improvement.
Implementation Schedule	The data collection for the identified direct measures of this learning outcome will be conducted annually (or each semester affiliated course(s) is taught) starting AU-2012. In adherence to the CFAES Academic Program Assessment Plan Revision Cycle, this program will go through a comprehensive outcomes assessment review every six years. The college's cycle will be conducted "off-set," by one year, to the university's Academic Program Review cycle conducted by the OSU Office of Academic Affairs. This plan links the timing of the periodic review of programmatic outcomes assessment to the six-year academic unit program review by having the review of assessment plans due the year prior to the unit program review. During the first year of implementation of a new (or re-envisioned) program assessment plan, focused attention will be given to refining the measures used for assessing achievement; to assure alignment of identified assignments with outcomes. During this initial year of

	<p>the plan, units may select to collect and report supporting data for half of the documented learning goals (or a minimum of three goals) within the plan. In the following year (year two), focused efforts exploring and reexamining appropriate measures for alignment with specific program learning outcomes will occur along with data collection and reporting the remainder of the program learning goals (those not addressed during the initial implementation year). During the third year of the college's comprehensive assessment plan revision cycle, in addition to collecting and reporting data for all program learning goals, academic units are encouraged to conduct faculty facilitated student, alumni, and/or stakeholder focus groups and/or surveys to aid in assessing success of learning outcomes, learning goals, and the program. For year four of the cycle, supporting data will be collected and reported for all program learning goals; upon conclusion of the academic year, units will craft and submit, to the college's Academic Affairs Committee an executive summary of findings based on the four years of Program Assessment Plan data collected. In the fifth year of the cycle units will continue collecting and reporting data for all program learning goals and will have a member of the instructional team review stated set of program learning goals to determine if modifications should be made in the forthcoming rendition of the program assessment plan. During year six, data collection and reporting for all program learning goals will continue; in addition, the unit will assemble and convene a formal programmatic assessment review team, comprised of faculty, staff, students, alumni, and stakeholders, to: review the accumulated findings from the assessment review cycle; appraise the achievement and success of the program; examine alignment of program learning goals and outcomes; and produce a summary of recommendations for program modifications and enhancement. The efforts of the team's comprehensive review of the individual Program Assessment Plan in "year six" will produce a "re-envisioned" plan.</p>
Evidence	
Met Minimum Criteria?	
Met Criteria for Excellence?	
Review of Findings	
Changes Made	
Assessment of Changes Made	
Next Steps	

Objective 2.3: *Describe a business plan to build and maintain a viable company serving the construction industry*

Methods: Means/Methods	<p>2.3.1) CNSYSM 3191: internship business planning final report Direct Measures: Internship - final business planning reports</p>
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Criteria	2.3.1) The minimal acceptable criterion for this outcome is 75% of students scoring 70% or higher on the identified assessment tasks for the measurement of achievement for this outcome. When 90% of the students obtain scores of 90% or higher on the selected assessment associated assignments, the performance standard constituting programmatic excellence for this learning outcome will be attained.
Planned Use	The unit's Academic Affairs Committee, faculty leadership of the B.S. in Construction Systems Management program of the Department of Food, Agricultural, and Biological Engineering, and course instructors will review the program, its supporting coursework, and the related assessment findings annually, on an ongoing basis, to formulate recommendations for incremental programmatic change. With the goal of improving learning, instruction and curriculum, indicators from a summary report of the findings will be used to plan the incorporation of needed modifications. Accumulative findings for all program goals based on the contributing outcomes will be used as the cornerstone in the programmatic assessment review cycle (as identified by the CFAES Academic Affairs Committee), providing essential information for making strategic adjustments to this academic program, assuring continuous quality improvement.
Implementation Schedule	The data collection for the identified direct measures of this learning outcome will be conducted annually (or each semester affiliated course(s) is taught) starting AU-2012. In adherence to the CFAES Academic Program Assessment Plan Revision Cycle, this program will go through a comprehensive outcomes assessment review every six years. The college's cycle will be conducted "off-set," by one year, to the university's Academic Program Review cycle conducted by the OSU Office of Academic Affairs. This plan links the timing of the periodic review of programmatic outcomes assessment to the six-year academic unit program review by having the review of assessment plans due the year prior to the unit program review. During the first year of implementation of a new (or re-envisioned) program assessment plan, focused attention will be given to refining the measures used for assessing achievement; to assure alignment of identified assignments with outcomes. During this initial year of the plan, units may select to collect and report supporting data for half of the documented learning goals (or a minimum of three goals) within the plan. In the following year (year two), focused efforts exploring and reexamining appropriate measures for alignment with specific program learning outcomes will occur along with data collection and reporting the remainder of the program learning goals (those not addressed during the initial implementation year). During the third year of the college's comprehensive assessment plan revision cycle, in addition to collecting and reporting data for all program learning goals,

	academic units are encouraged to conduct faculty facilitated student, alumni, and/or stakeholder focus groups and/or surveys to aid in assessing success of learning outcomes, learning goals, and the program. For year four of the cycle, supporting data will be collected and reported for all program learning goals; upon conclusion of the academic year, units will craft and submit, to the college's Academic Affairs Committee an executive summary of findings based on the four years of Program Assessment Plan data collected. In the fifth year of the cycle units will continue collecting and reporting data for all program learning goals and will have a member of the instructional team review stated set of program learning goals to determine if modifications should be made in the forthcoming rendition of the program assessment plan. During year six, data collection and reporting for all program learning goals will continue; in addition, the unit will assemble and convene a formal programmatic assessment review team, comprised of faculty, staff, students, alumni, and stakeholders, to: review the accumulated findings from the assessment review cycle; appraise the achievement and success of the program; examine alignment of program learning goals and outcomes; and produce a summary of recommendations for program modifications and enhancement. The efforts of the team's comprehensive review of the individual Program Assessment Plan in "year six" will produce a "re-envisioned" plan.
Evidence	
Met Minimum Criteria?	
Met Criteria for Excellence?	
Review of Findings	
Changes Made	
Assessment of Changes Made	
Next Steps	

Goal 3: Know and exhibit the professional, interpersonal, and communication expertise essential for employment and advancement in construction industry

Methods: Means/Methods	3.1.1) CNSYSM 4900: teamwork evaluation from final group project 3.1.2) CNSYSM 4605: teamwork evaluation from group project 3.2.1) CNSYSM 4605: group presentation - oral presentation 3.2.2) CNSYSM 4605: group presentation - presentation project report 3.2.3) CNSYSM 3191: internship final oral presentation 3.2.4) CNSYSM 3191: internship final written report 3.3.1) Related questions on alumni survey 3.4.1) CNSYSM 3191: internship assessment of student networking activities 3.4.2 -&- 3.5.2) Survey of student involvement 3.5.1) CNSYSM 4605: mock interview exercise Direct Measures: Group projects - teamwork evaluations Group presentation - oral
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	<p>presentation Group presentation - presentation project report Internship - final oral presentation Internship - final written report Internship - student networking activities Mock interview exercises Indirect Measures: Alumni surveys Survey - student involvement</p>
Criteria	<p>3.1.1 - 3.1.2 - 3.2.1 - 3.2.2 - 3.2.3 - 3.2.4 - 3.4.1 -&- 3.5.1) The minimal acceptable criterion for this outcome is 75% of students scoring 70% or higher on the identified assessment tasks for the measurement of achievement for this outcome. When 90% of the students obtain scores of 90% or higher on the selected assessment associated assignments, the performance standard constituting programmatic excellence for this learning outcome will be attained. 3.3.1) This indirect measure will serve as indicators of attainment of this learning goal's supporting outcome. Specifically, the satisfactory achievement criterion for this outcome method will be an average response of at least "involved" for all identified areas. When 90% of those surveyed have an average response of "very involved" for all identified areas, the performance standard constituting programmatic excellence for this supporting learning outcome measure will be attained. 3.4.2 -&- 3.2.5) This indirect measure will serve as an indicator of attainment of this learning goal's supporting outcome. Specifically, minimal acceptable criterion for the identified supporting learning outcome is when 75% of program's enrolled students report being "active" members of the OSU AGRICULTURAL AND CONSTRUCTION SYSTEMS MANAGEMENT (ACSM) club. When 95% program's enrolled students report being "active" members of the ACSM club, the performance standard constituting programmatic excellence for this learning outcome will be attained.</p>
Planned Use	<p>The FABE Academic Affairs Committee and course instructors will review the program, its supporting coursework, and the related assessment findings annually, on an ongoing basis, to formulate recommendations for incremental programmatic change. With the goal of improving learning, instruction, and curriculum, indicators from a summary report of the findings will be used to plan the incorporation of needed modifications. Accumulative findings for all program goals based on the contributing outcomes will be used as the cornerstone in the programmatic review cycle (every sixth year). Providing essential information for making strategic adjustments to this academic program, assuring continuous quality improvement.</p>
Implementation Schedule	<p>The data collection for the identified direct measures of the supporting learning outcomes will be conducted annually (or each semester affiliated course(s) is taught) starting AU-2012. In adherence to the CFAES Academic Program Assessment Plan Revision Cycle, this program will go through a comprehensive outcomes assessment review every six years. The college's cycle</p>

	<p>will be conducted "off-set," by one year, to the university's Academic Program Review cycle conducted by the OSU Office of Academic Affairs. This plan links the timing of the periodic review of programmatic outcomes assessment to the six-year academic unit program review by having the review of assessment plans due the year prior to the unit program review. During the first year of implementation of a new (or re-envisioned) program assessment plan, focused attention will be given to refining the measures used for assessing achievement; to assure alignment of identified assignments with outcomes. During this initial year of the plan, units may select to collect and report supporting data for half of the documented learning goals (or a minimum of three goals) within the plan. In the following year (year two), focused efforts exploring and reexamining appropriate measures for alignment with specific program learning outcomes will occur along with data collection and reporting the remainder of the program learning goals (those not addressed during the initial implementation year). During the third year of the college's comprehensive assessment plan revision cycle, in addition to collecting and reporting data for all program learning goals, academic units are encouraged to conduct faculty facilitated student, alumni, and/or stakeholder focus groups and/or surveys to aid in assessing success of learning outcomes, learning goals, and the program. For year four of the cycle, supporting data will be collected and reported for all program learning goals; upon conclusion of the academic year, units will craft and submit, to the college's Academic Affairs Committee an executive summary of findings based on the four years of Program Assessment Plan data collected. In the fifth year of the cycle units will continue collecting and reporting data for all program learning goals and will have a member of the instructional team review stated set of program learning goals to determine if modifications should be made in the forthcoming rendition of the program assessment plan. During year six, data collection and reporting for all program learning goals will continue; in addition, the unit will assemble and convene a formal programmatic assessment review team, comprised of faculty, staff, students, alumni, and stakeholders, to: review the accumulated findings from the assessment review cycle; appraise the achievement and success of the program; examine alignment of program learning goals and outcomes; and produce a summary of recommendations for program modifications and enhancement. The efforts of the team's comprehensive review of the individual Program Assessment Plan in "year six" will produce a "re-envisioned" plan.</p>
Evidence	
Met Minimum Criteria?	
Met Criteria for Excellence?	
Review of Findings	

Changes Made	
Assessment of Changes Made	
Next Steps	

Objective 3.1: *Demonstrate the ability to function within multi-disciplinary teams*

Methods: Means/Methods	3.1.1) CNSYSM 4900: teamwork evaluation from final group project 3.1.2) CNSYSM 4605: teamwork evaluation from group project Direct Measures: Group projects - teamwork evaluations
Criteria	3.1.1 -& 3.1.2) The minimal acceptable criterion for this outcome is 75% of students scoring 70% or higher on the identified assessment tasks for the measurement of achievement for this outcome. When 90% of the students obtain scores of 90% or higher on the selected assessment associated assignments, the performance standard constituting programmatic excellence for this learning outcome will be attained.
Planned Use	The unit's Academic Affairs Committee, faculty leadership of the B.S. in Construction Systems Management program of the Department of Food, Agricultural, and Biological Engineering, and course instructors will review the program, its supporting coursework, and the related assessment findings annually, on an ongoing basis, to formulate recommendations for incremental programmatic change. With the goal of improving learning, instruction and curriculum, indicators from a summary report of the findings will be used to plan the incorporation of needed modifications. Accumulative findings for all program goals based on the contributing outcomes will be used as the cornerstone in the programmatic assessment review cycle (as identified by the CFAES Academic Affairs Committee), providing essential information for making strategic adjustments to this academic program, assuring continuous quality improvement.
Implementation Schedule	The data collection for the identified direct measures of this learning outcome will be conducted annually (or each semester affiliated course(s) is taught) starting AU-2012. In adherence to the CFAES Academic Program Assessment Plan Revision Cycle, this program will go through a comprehensive outcomes assessment review every six years. The college's cycle will be conducted "off-set," by one year, to the university's Academic Program Review cycle conducted by the OSU Office of Academic Affairs. This plan links the timing of the periodic review of programmatic outcomes assessment to the six-year academic unit program review by having the review of assessment plans due the year prior to the unit program review. During the first year of implementation of a new (or re-envisioned) program assessment plan, focused attention will be given to refining the measures used for assessing achievement; to assure alignment of

	<p>identified assignments with outcomes. During this initial year of the plan, units may select to collect and report supporting data for half of the documented learning goals (or a minimum of three goals) within the plan. In the following year (year two), focused efforts exploring and reexamining appropriate measures for alignment with specific program learning outcomes will occur along with data collection and reporting the remainder of the program learning goals (those not addressed during the initial implementation year). During the third year of the college's comprehensive assessment plan revision cycle, in addition to collecting and reporting data for all program learning goals, academic units are encouraged to conduct faculty facilitated student, alumni, and/or stakeholder focus groups and/or surveys to aid in assessing success of learning outcomes, learning goals, and the program. For year four of the cycle, supporting data will be collected and reported for all program learning goals; upon conclusion of the academic year, units will craft and submit, to the college's Academic Affairs Committee an executive summary of findings based on the four years of Program Assessment Plan data collected. In the fifth year of the cycle units will continue collecting and reporting data for all program learning goals and will have a member of the instructional team review stated set of program learning goals to determine if modifications should be made in the forthcoming rendition of the program assessment plan. During year six, data collection and reporting for all program learning goals will continue; in addition, the unit will assemble and convene a formal programmatic assessment review team, comprised of faculty, staff, students, alumni, and stakeholders, to: review the accumulated findings from the assessment review cycle; appraise the achievement and success of the program; examine alignment of program learning goals and outcomes; and produce a summary of recommendations for program modifications and enhancement. The efforts of the team's comprehensive review of the individual Program Assessment Plan in "year six" will produce a "re-envisioned" plan.</p>
Evidence	
Met Minimum Criteria?	
Met Criteria for Excellence?	
Review of Findings	
Changes Made	
Assessment of Changes Made	
Next Steps	

Objective 3.2: *Communicate effectively in both written and oral contexts*

Methods: Means/Methods	<p>3.2.1) CNSYSM 4605: group presentation - oral presentation 3.2.2) CNSYSM 4605: group presentation - presentation project</p>
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	report 3.2.3) CNSYSM 3191: internship final oral presentation 3.2.4) CNSYSM 3191: internship final written report Direct Measures: Group presentation - oral presentation Group presentation - presentation project report Internship - final oral presentation Internship - final written report
Criteria	3.2.1 - 3.2.2 - 3.2.3 -&- 3.2.4) The minimal acceptable criterion for this outcome is 75% of students scoring 70% or higher on the identified assessment tasks for the measurement of achievement for this outcome. When 90% of the students obtain scores of 90% or higher on the selected assessment associated assignments, the performance standard constituting programmatic excellence for this learning outcome will be attained.
Planned Use	The unit's Academic Affairs Committee, faculty leadership of the B.S. in Construction Systems Management program of the Department of Food, Agricultural, and Biological Engineering, and course instructors will review the program, its supporting coursework, and the related assessment findings annually, on an ongoing basis, to formulate recommendations for incremental programmatic change. With the goal of improving learning, instruction and curriculum, indicators from a summary report of the findings will be used to plan the incorporation of needed modifications. Accumulative findings for all program goals based on the contributing outcomes will be used as the cornerstone in the programmatic assessment review cycle (as identified by the CFAES Academic Affairs Committee), providing essential information for making strategic adjustments to this academic program, assuring continuous quality improvement.
Implementation Schedule	The data collection for the identified direct measures of this learning outcome will be conducted annually (or each semester affiliated course(s) is taught) starting AU-2012. In adherence to the CFAES Academic Program Assessment Plan Revision Cycle, this program will go through a comprehensive outcomes assessment review every six years. The college's cycle will be conducted "off-set," by one year, to the university's Academic Program Review cycle conducted by the OSU Office of Academic Affairs. This plan links the timing of the periodic review of programmatic outcomes assessment to the six-year academic unit program review by having the review of assessment plans due the year prior to the unit program review. During the first year of implementation of a new (or re-envisioned) program assessment plan, focused attention will be given to refining the measures used for assessing achievement; to assure alignment of identified assignments with outcomes. During this initial year of the plan, units may select to collect and report supporting data for half of the documented learning goals (or a minimum of three goals) within the plan. In the following year (year two), focused efforts exploring and reexamining appropriate measures for alignment with specific program learning outcomes will occur

	<p>along with data collection and reporting the remainder of the program learning goals (those not addressed during the initial implementation year). During the third year of the college's comprehensive assessment plan revision cycle, in addition to collecting and reporting data for all program learning goals, academic units are encouraged to conduct faculty facilitated student, alumni, and/or stakeholder focus groups and/or surveys to aid in assessing success of learning outcomes, learning goals, and the program. For year four of the cycle, supporting data will be collected and reported for all program learning goals; upon conclusion of the academic year, units will craft and submit, to the college's Academic Affairs Committee an executive summary of findings based on the four years of Program Assessment Plan data collected. In the fifth year of the cycle units will continue collecting and reporting data for all program learning goals and will have a member of the instructional team review stated set of program learning goals to determine if modifications should be made in the forthcoming rendition of the program assessment plan. During year six, data collection and reporting for all program learning goals will continue; in addition, the unit will assemble and convene a formal programmatic assessment review team, comprised of faculty, staff, students, alumni, and stakeholders, to: review the accumulated findings from the assessment review cycle; appraise the achievement and success of the program; examine alignment of program learning goals and outcomes; and produce a summary of recommendations for program modifications and enhancement. The efforts of the team's comprehensive review of the individual Program Assessment Plan in "year six" will produce a "re-envisioned" plan.</p>
Evidence	
Met Minimum Criteria?	
Met Criteria for Excellence?	
Review of Findings	
Changes Made	
Assessment of Changes Made	
Next Steps	

Objective 3.3: *Actively engage in continuous professional development*

Methods: Means/Methods	3.3.1) Related questions on alumni survey Indirect Measures: Alumni surveys
Criteria	3.3.1) This indirect measure will serve as indicators of attainment of this supporting outcome. Specifically, the satisfactory achievement criterion for this outcome method will be an average response of at least "involved" for all identified areas. When 90% of those surveyed have an average response of "very involved" for all identified areas, the performance standard

	constituting programmatic excellence for this supporting learning outcome measure will be attained.
Planned Use	The unit's Academic Affairs Committee, faculty leadership of the B.S. in Construction Systems Management program of the Department of Food, Agricultural, and Biological Engineering, and course instructors will review the program, its supporting coursework, and the related assessment findings annually, on an ongoing basis, to formulate recommendations for incremental programmatic change. With the goal of improving learning, instruction and curriculum, indicators from a summary report of the findings will be used to plan the incorporation of needed modifications. Accumulative findings for all program goals based on the contributing outcomes will be used as the cornerstone in the programmatic assessment review cycle (as identified by the CFAES Academic Affairs Committee), providing essential information for making strategic adjustments to this academic program, assuring continuous quality improvement.
Implementation Schedule	The data collection for the identified direct measures of this learning outcome will be conducted annually (or each semester affiliated course(s) is taught) starting AU-2012. In adherence to the CFAES Academic Program Assessment Plan Revision Cycle, this program will go through a comprehensive outcomes assessment review every six years. The college's cycle will be conducted "off-set," by one year, to the university's Academic Program Review cycle conducted by the OSU Office of Academic Affairs. This plan links the timing of the periodic review of programmatic outcomes assessment to the six-year academic unit program review by having the review of assessment plans due the year prior to the unit program review. During the first year of implementation of a new (or re-envisioned) program assessment plan, focused attention will be given to refining the measures used for assessing achievement; to assure alignment of identified assignments with outcomes. During this initial year of the plan, units may select to collect and report supporting data for half of the documented learning goals (or a minimum of three goals) within the plan. In the following year (year two), focused efforts exploring and reexamining appropriate measures for alignment with specific program learning outcomes will occur along with data collection and reporting the remainder of the program learning goals (those not addressed during the initial implementation year). During the third year of the college's comprehensive assessment plan revision cycle, in addition to collecting and reporting data for all program learning goals, academic units are encouraged to conduct faculty facilitated student, alumni, and/or stakeholder focus groups and/or surveys to aid in assessing success of learning outcomes, learning goals, and the program. For year four of the cycle, supporting data will be collected and reported for all program learning goals; upon

	conclusion of the academic year, units will craft and submit, to the college's Academic Affairs Committee an executive summary of findings based on the four years of Program Assessment Plan data collected. In the fifth year of the cycle units will continue collecting and reporting data for all program learning goals and will have a member of the instructional team review stated set of program learning goals to determine if modifications should be made in the forthcoming rendition of the program assessment plan. During year six, data collection and reporting for all program learning goals will continue; in addition, the unit will assemble and convene a formal programmatic assessment review team, comprised of faculty, staff, students, alumni, and stakeholders, to: review the accumulated findings from the assessment review cycle; appraise the achievement and success of the program; examine alignment of program learning goals and outcomes; and produce a summary of recommendations for program modifications and enhancement. The efforts of the team's comprehensive review of the individual Program Assessment Plan in "year six" will produce a "re-envisioned" plan.
Evidence	
Met Minimum Criteria?	
Met Criteria for Excellence?	
Review of Findings	
Changes Made	
Assessment of Changes Made	
Next Steps	

Objective 3.4: *Contribute technical and management skills to improve local communities and actively participate in community activities, organizations and charities*

Methods: Means/Methods	3.4.1) CNSYSM 3191: internship assessment of student networking activities 3.4.2) Survey of student involvement Direct Measures: Internship - student networking activities Indirect Measures: Survey - student involvement
Criteria	3.4.1) The minimal acceptable criterion for this outcome is 75% of students scoring 70% or higher on the identified assessment tasks for the measurement of achievement for this outcome. When 90% of the students obtain scores of 90% or higher on the selected assessment associated assignments, the performance standard constituting programmatic excellence for this learning outcome will be attained. 3.4.2) This indirect measure will serve as an indicator of attainment of this learning goal's supporting outcome. Specifically, minimal acceptable criterion for the identified supporting learning outcome is when 75% of program's enrolled students report being "active" members of the OSU AGRICULTURAL AND CONSTRUCTION SYSTEMS MANAGEMENT (ACSM) club. When 95% program's enrolled students report being

	<p>“active” members of the ACSM club, the performance standard constituting programmatic excellence for this learning outcome will be attained.</p>
Planned Use	<p>The unit's Academic Affairs Committee, faculty leadership of the B.S. in Construction Systems Management program of the Department of Food, Agricultural, and Biological Engineering, and course instructors will review the program, its supporting coursework, and the related assessment findings annually, on an ongoing basis, to formulate recommendations for incremental programmatic change. With the goal of improving learning, instruction and curriculum, indicators from a summary report of the findings will be used to plan the incorporation of needed modifications. Accumulative findings for all program goals based on the contributing outcomes will be used as the cornerstone in the programmatic assessment review cycle (as identified by the CFAES Academic Affairs Committee), providing essential information for making strategic adjustments to this academic program, assuring continuous quality improvement.</p>
Implementation Schedule	<p>The data collection for the identified direct measures of this learning outcome will be conducted annually (or each semester affiliated course(s) is taught) starting AU-2012. In adherence to the CFAES Academic Program Assessment Plan Revision Cycle, this program will go through a comprehensive outcomes assessment review every six years. The college's cycle will be conducted “off-set,” by one year, to the university's Academic Program Review cycle conducted by the OSU Office of Academic Affairs. This plan links the timing of the periodic review of programmatic outcomes assessment to the six-year academic unit program review by having the review of assessment plans due the year prior to the unit program review. During the first year of implementation of a new (or re-envisioned) program assessment plan, focused attention will be given to refining the measures used for assessing achievement; to assure alignment of identified assignments with outcomes. During this initial year of the plan, units may select to collect and report supporting data for half of the documented learning goals (or a minimum of three goals) within the plan. In the following year (year two), focused efforts exploring and reexamining appropriate measures for alignment with specific program learning outcomes will occur along with data collection and reporting the remainder of the program learning goals (those not addressed during the initial implementation year). During the third year of the college's comprehensive assessment plan revision cycle, in addition to collecting and reporting data for all program learning goals, academic units are encouraged to conduct faculty facilitated student, alumni, and/or stakeholder focus groups and/or surveys to aid in assessing success of learning outcomes, learning goals, and the program. For year four of the cycle, supporting data will</p>

	be collected and reported for all program learning goals; upon conclusion of the academic year, units will craft and submit, to the college's Academic Affairs Committee an executive summary of findings based on the four years of Program Assessment Plan data collected. In the fifth year of the cycle units will continue collecting and reporting data for all program learning goals and will have a member of the instructional team review stated set of program learning goals to determine if modifications should be made in the forthcoming rendition of the program assessment plan. During year six, data collection and reporting for all program learning goals will continue; in addition, the unit will assemble and convene a formal programmatic assessment review team, comprised of faculty, staff, students, alumni, and stakeholders, to: review the accumulated findings from the assessment review cycle; appraise the achievement and success of the program; examine alignment of program learning goals and outcomes; and produce a summary of recommendations for program modifications and enhancement. The efforts of the team's comprehensive review of the individual Program Assessment Plan in "year six" will produce a "re-envisioned" plan.
Evidence	
Met Minimum Criteria?	
Met Criteria for Excellence?	
Review of Findings	
Changes Made	
Assessment of Changes Made	
Next Steps	

Objective 3.5: *Identify the benefits of actively engaging and serving relevant industry associations and organizations*

Methods: Means/Methods	3.5.1) CNSYSM 4605: mock interview exercise 3.5.2) Survey of student involvement Direct Measures: Mock interview exercises Indirect Measures: Survey - student involvement
Criteria	3.5.1) The minimal acceptable criterion for this outcome is 75% of students scoring 70% or higher on the identified assessment tasks for the measurement of achievement for this outcome. When 90% of the students obtain scores of 90% or higher on the selected assessment associated assignments, the performance standard constituting programmatic excellence for this learning outcome will be attained. 3.5.2) This indirect measure will serve as an indicator of attainment of this learning goal's supporting outcome. Specifically, minimal acceptable criterion for the identified supporting learning outcome is when 75% of program's enrolled students report being "active" members of the OSU AGRICULTURAL AND CONSTRUCTION SYSTEMS MANAGEMENT (ACSM) club. When 95% program's enrolled students report being

	<p>“active” members of the ACSM club, the performance standard constituting programmatic excellence for this learning outcome will be attained.</p>
Planned Use	<p>The unit's Academic Affairs Committee, faculty leadership of the B.S. in Construction Systems Management program of the Department of Food, Agricultural, and Biological Engineering, and course instructors will review the program, its supporting coursework, and the related assessment findings annually, on an ongoing basis, to formulate recommendations for incremental programmatic change. With the goal of improving learning, instruction and curriculum, indicators from a summary report of the findings will be used to plan the incorporation of needed modifications. Accumulative findings for all program goals based on the contributing outcomes will be used as the cornerstone in the programmatic assessment review cycle (as identified by the CFAES Academic Affairs Committee), providing essential information for making strategic adjustments to this academic program, assuring continuous quality improvement.</p>
Implementation Schedule	<p>The data collection for the identified direct measures of this learning outcome will be conducted annually (or each semester affiliated course(s) is taught) starting AU-2012. In adherence to the CFAES Academic Program Assessment Plan Revision Cycle, this program will go through a comprehensive outcomes assessment review every six years. The college's cycle will be conducted “off-set,” by one year, to the university's Academic Program Review cycle conducted by the OSU Office of Academic Affairs. This plan links the timing of the periodic review of programmatic outcomes assessment to the six-year academic unit program review by having the review of assessment plans due the year prior to the unit program review. During the first year of implementation of a new (or re-envisioned) program assessment plan, focused attention will be given to refining the measures used for assessing achievement; to assure alignment of identified assignments with outcomes. During this initial year of the plan, units may select to collect and report supporting data for half of the documented learning goals (or a minimum of three goals) within the plan. In the following year (year two), focused efforts exploring and reexamining appropriate measures for alignment with specific program learning outcomes will occur along with data collection and reporting the remainder of the program learning goals (those not addressed during the initial implementation year). During the third year of the college's comprehensive assessment plan revision cycle, in addition to collecting and reporting data for all program learning goals, academic units are encouraged to conduct faculty facilitated student, alumni, and/or stakeholder focus groups and/or surveys to aid in assessing success of learning outcomes, learning goals, and the program. For year four of the cycle, supporting data will</p>

	<p>be collected and reported for all program learning goals; upon conclusion of the academic year, units will craft and submit, to the college's Academic Affairs Committee an executive summary of findings based on the four years of Program Assessment Plan data collected. In the fifth year of the cycle units will continue collecting and reporting data for all program learning goals and will have a member of the instructional team review stated set of program learning goals to determine if modifications should be made in the forthcoming rendition of the program assessment plan. During year six, data collection and reporting for all program learning goals will continue; in addition, the unit will assemble and convene a formal programmatic assessment review team, comprised of faculty, staff, students, alumni, and stakeholders, to: review the accumulated findings from the assessment review cycle; appraise the achievement and success of the program; examine alignment of program learning goals and outcomes; and produce a summary of recommendations for program modifications and enhancement. The efforts of the team's comprehensive review of the individual Program Assessment Plan in "year six" will produce a "re-envisioned" plan.</p>
Evidence	
Met Minimum Criteria?	
Met Criteria for Excellence?	
Review of Findings	
Changes Made	
Assessment of Changes Made	
Next Steps	

O. Collection of the Assessment Data

Construction Systems Management - BSC

Sp2014		CON. 1.0				CON. 2.0				CON. 3.0															
		Have the necessary knowledge and understanding for planning and managing construction projects				Become familiar with and understand the business principles and ethical practices necessary in the construction and related industries				Know and exhibit the professional, interpersonal, and communication expertise essential for employment and advancement in construction industry															
		OUTCOME 1.1		OUTCOME 1.2		OUTCOME 1.3		OUTCOME 2.1		OUTCOME 2.2		OUTCOME 2.3		OUTCOME 3.1		OUTCOME 3.2		OUTCOME 3.3		OUTCOME 3.4		OUTCOME 3.5			
		Describe the management plan for the construction of building and other structures, including the budget and other relevant information.		Describe the management plan for the construction of building and other structures, including the budget and other relevant information.		Describe the management plan for the construction of building and other structures, including the budget and other relevant information.		Apply knowledge of business and management principles to the construction industry.		Employ professional and ethical practices.		Describe the project management process.		Communicate the ability to function as a team, including the ability to work with others in a collaborative environment.		Communicate effectively in both written and oral contexts.		Communicate effectively in both written and oral contexts.		Communicate effectively in both written and oral contexts.		Communicate effectively in both written and oral contexts.			
		1.1.1	1.1.2	1.2.1	1.2.2	1.3.1	1.3.2	2.1.1	2.1.2	2.2.1	2.2.2	2.3.1	2.3.2	3.1.1	3.1.2	3.2.1	3.2.2	3.3.1	3.3.2	3.4.1	3.4.2	3.5.1	3.5.2		
		CONVSM 4000	CONVSM 4002	CONVSM 4000	CONVSM 4002	CONVSM 4000	CONVSM 4002	CONVSM 4000	CONVSM 4002	CONVSM 4000	CONVSM 4002	CONVSM 4000	CONVSM 4002	CONVSM 4000	CONVSM 4002	CONVSM 4000	CONVSM 4002	CONVSM 4000	CONVSM 4002	CONVSM 4000	CONVSM 4002	CONVSM 4000	CONVSM 4002		
Interpretation, analysis, and synthesis.		Interpretation, analysis, and synthesis.		Interpretation, analysis, and synthesis.		Interpretation, analysis, and synthesis.		Project management planning and execution.		Interpretation, analysis, and synthesis.		Interpretation, analysis, and synthesis.		Interpretation, analysis, and synthesis.		Interpretation, analysis, and synthesis.		Interpretation, analysis, and synthesis.		Interpretation, analysis, and synthesis.		Interpretation, analysis, and synthesis.			
Summary - meta data Course notes																									
Semester = (Au, Sp, or Su)		Sp2014	Sp2014	Sp2014	Sp2014	Sp2014	Sp2014	Sp2014	Sp2014	Sp2014	Sp2014	Sp2014	Sp2014	Sp2014	Sp2014	Sp2014	Sp2014	Sp2014	Sp2014	Sp2014	Sp2014	Sp2014	Sp2014		
Course Name:		CONVSM 4000	CONVSM 4002	CONVSM 4000	CONVSM 4002	CONVSM 4000	CONVSM 4002	CONVSM 4000	CONVSM 4002	CONVSM 4000	CONVSM 4002	CONVSM 4000	CONVSM 4002	CONVSM 4000	CONVSM 4002	CONVSM 4000	CONVSM 4002	CONVSM 4000	CONVSM 4002	CONVSM 4000	CONVSM 4002	CONVSM 4000	CONVSM 4002		
N =		80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80		
% meeting MINIMUM CRITERIA -		81%	81%	81%	81%	81%	81%	81%	81%	81%	81%	81%	81%	81%	81%	81%	81%	81%	81%	81%	81%	81%	81%		
% meeting CRITERIA for EXCELLENCE		32%	32%	32%	32%	32%	32%	32%	32%	32%	32%	32%	32%	32%	32%	32%	32%	32%	32%	32%	32%	32%	32%		
Criteria																									
Evidence																									
Review of Findings																									
Changes Made																									
Assessment of Changes Made																									
Next Steps																									

Criteria	A	The minimal acceptable criterion for this outcome is 75% of students scoring 75% or higher on the identified assessment tasks for the measurement of achievement for this outcome. When 50% of the students obtain scores of 90% or higher on the selected assessment associated assignments, the performance standard constituting programmatic excellence for this learning outcome will be attained.
Criteria	B	This indirect measure will serve as indicators of attainment of this learning goal's supporting outcome. Specifically, the satisfactory achievement criterion for this outcome method will be an average response of at least "involved" for all identified areas. When 90% of those surveyed have an average response of "very involved" for all identified areas, the performance standard constituting programmatic excellence for this supporting learning outcome measure will be attained.
Criteria	C	This indirect measure will serve as an indicator of attainment of this learning goal's supporting outcome. Specifically, the minimal acceptable criterion for the identified supporting learning outcome is when 75% of program's enrolled students report being "active" members of the OSU AGRICULTURAL AND CONSTRUCTION SYSTEMS MANAGEMENT (ACSM) club. When 90% program's enrolled students report being "active" members of the ACSM club, the performance standard constituting programmatic excellence for this learning outcome will be attained.

* the language for answering these questions will be crafted at the end of the annual reporting cycle in collaboration with the CFAES Assessment Coordinator