

**2012-2013 Assessment Report
Program: Building Science, BS**

College of Architecture, Design & Construction

McWhorter School of Building Science

Building Science, BS

Expected Outcome 1: Administration and management of construction project activities

After review and analysis of construction documentation, the graduating Building Science major will be able to effectively participate in the administration and management of construction project activities from inception through de-construction.

Assessment Method 1: Evaluation of student's performance in BSCI 4980

Assessment Method Description

Evaluation of student's performance in BSCI 4980 Building Science Thesis. Course description:

Individual project demonstrating mastery of curriculum content through the application of skills/knowledge to a theoretical construction company and project. Requires a written thesis and oral defense of work.

Based on an evaluation of the students' performance in the thesis and subsequent meeting faculty and/or industry evaluators are asked to evaluate the student on how strongly they agree (on a five point scale) they have met the following 10 learning outcomes:

1.2	Describe Mechanical & Electrical Systems
1.9	Review the financial health of a construction project
1.10	Schedule construction activities
1.11	Create solutions to provide temporary support during construction
1.12	Assess various structural systems
1.13	Prepare construction project documents for construction phase
1.15	Assess the jobsite safety program
1.19	Prepare the construction schedule
1.20	Estimate the cost of construction work using various methods
1.21	Manage their time effectively

A grading rubric for thesis was also introduced for the thesis during the 2010/11 academic year. The Thesis is graded across 10 grading criteria and an average percentage for each criteria is recorded. The 10 criteria used to measure this outcome are:

- 4. Project Estimate
- 6. Project Administration
- 7. Project Documents
- 8. Project Schedule
- 9. Structural
- 10. Student Selected Work

All graduating students are assessed. This is approximately 90 students.

Findings

This expected outcome is evaluated by 10 learning outcomes that are individually evaluated by faculty or industry graders. Of the 10 learning outcomes evaluated during the Fall 2012 semester the following mean response rates on a 5 point scale were recorded:

1.2	Describe Mechanical & Electrical Systems.	3.91	
1.9	Review the financial health of a construction project.		3.43
1.10	Schedule construction activities.	3.80	
1.11	Create solutions to provide temporary support during construction.		3.57
1.12	Assess various structural systems.	3.88	
1.13	Prepare construction project documents for construction phase.		3.71
1.15	Assess the jobsite safety program.	3.71	
1.19	Prepare the construction schedule.	3.74	
1.20	Estimate the cost of construction work using various methods.		4.09
1.21	Manage their time effectively.	3.91	

Of the 10 learning outcomes evaluated during the Spring 2013 semester the following mean response rates on a 5 point scale were recorded:

1.2	Describe Mechanical & Electrical Systems.	3.96	
1.9	Review the financial health of a construction project.		3.48
1.10	Schedule construction activities.		4.00
1.11	Create solutions to provide temporary support during construction.		3.83
1.12	Assess various structural systems.	3.75	
1.13	Prepare construction project documents for construction phase.		4.00
1.15	Assess the jobsite safety program.	3.92	
1.19	Prepare the construction schedule.	3.88	
1.20	Estimate the cost of construction work using various methods.		4.17
1.21	Manage their time effectively.	4.15	

Of the 10 learning outcomes evaluated during the Summer 2013 semester the following mean response rates on a 5 point scale were recorded:

1.2	Describe Mechanical & Electrical Systems.	3.72	
1.9	Review the financial health of a construction project.		3.47
1.10	Schedule construction activities.	3.83	
1.11	Create solutions to provide temporary support during construction.		3.59
1.12	Assess various structural systems.	3.78	
1.13	Prepare construction project documents for construction phase.		3.78
1.15	Assess the jobsite safety program.	3.83	
1.19	Prepare the construction schedule.	3.83	
1.20	Estimate the cost of construction work using various methods.		4.17
1.21	Manage their time effectively.	3.72	

This expected outcome is also evaluated by the 9 grading criteria that are individually evaluated by faculty or industry graders. Of the 9 criteria graded by faculty during Fall 2012 the following mean percentage scores were recorded:

Project Estimate	83.02%
Project Administration	76.30%
Project Documents	87.27%
Project Schedule	80.73%
Structural	92.30%
Student Selected Work	79.91%

Of the 10 criteria graded by faculty during Spring 2013 the following mean percentage scores were recorded:

Project Estimate	86.08%
Project Administration	83.48%
Project Documents	90.60%
Project Schedule	83.26%
Structural	82.92%
Student Selected work	74.78%

Of the 10 criteria graded by faculty during Summer 2013 the following mean percentage scores were recorded:

Project Estimate	86.36%
Project Administration	82.81%
Project Documents	87.55%
Project Schedule	79.06%
Structural	83.19%
Student Selected work	87.35%

How did you use findings for improvement?

The annual quality improvement meeting was held on Wednesday May 1, 2013. Prior to meeting faculty were given one week to review data collected from the following assessment exercises:

1. Student's performance in BSCI 4980 Building Science Thesis (Grading Rubric)
 1. Spring 2012
 2. Summer 2012
 3. Fall 2012
2. Faculty assessment of Learning Objectives and Outcomes for Undergraduate Program by evaluation of performance in the thesis
 1. Spring 2012

2. Summer 2012
3. Fall 2012

The BSCI faculty was asked to identify any specific issues identified from the various assessment exercises mentioned previously. No specific issues were identified by the faculty that currently require addressing. The consistent performance of students in the thesis is most likely due to the introducing of the grading rubric following concerns expressed by students as part of the 2011 annual assessment report.

Additional Comments

At a faculty meeting on September 23 the faculty decided to conduct a major review of BSCI 4980 Building Science Thesis. This review has been prompted by the introduction of new learning outcomes based standards by our accreditation agency, the American Council for Construction Education and the need to teach and assess the class in a more manageable way. The chair of undergraduate studies, Ben Farow has put together a committee that will re-structure the thesis to address many of the 21 ACCE learning outcomes. The committee will present its draft proposal to the faculty and industry by the end of the spring 2014 semester with a view to teaching the "new" thesis for the first time in fall 2015.

In the short term the thesis class will be taught and assessed in sections of ten students taught by a team of faculty (2 credit hours per faculty) effective fall 2014. We will continue with the current thesis assignment and assessment criteria. At the same time faculty will be given autonomy to alter the thesis instructions to facilitate grading of the thesis in a timely and appropriate manner.

Assessment Method 2: Graduating Seniors Exit Survey & Interview

Assessment Method Description

An online Exit Survey is sent to graduating seniors each semester. Students are asked how strongly they agree (on a five point scale) they have met the 21 McWhorter School of Building Science Learning outcomes used to evaluate this objective:

- 1.1 Review construction materials, methods, and sequences within the context of the environment and technology.
- 1.2 Describe Mechanical and Electrical Systems.
- 1.3 Explain the construction life cycle processes from initiation to deconstruction.
- 1.4 Review the roles of all stakeholders in a construction project.

- 1.5 Identify applicable Building Codes and other construction regulations.
- 1.6 Discuss different project delivery systems.
- 1.7 Identify construction best practices.
- 1.8 Describe the principles of sustainable construction & development.
- 1.9 Review the financial health of a construction project.
- 1.10 Schedule construction activities.
- 1.11 Create solutions to provide temporary support during construction.
- 1.12 Assess various structural systems.
- 1.13 Prepare construction project documents for construction phase.
- 1.14 Prepare procedures to identify, evaluate and manage risk.
- 1.15 Assess the job site safety program.
- 1.16 Inspect work for quality assurance and control purposes.
- 1.17 Organize LEED Green Building activities.
- 1.18 Evaluate submittal documents.

1.19 Prepare the construction schedule.

1.20 Estimate the cost of construction work using various methods.

1.21 Manage their time effectively.

In addition the school head meets with all graduating students in small groups to identify good and bad experiences during their time in the program and any suggestions for improvement.

Findings

This expected outcome is evaluated by 21 learning outcomes that are individually evaluated by graduating seniors. Of the 21 learning outcomes evaluated during the Fall 2012 semester the following mean response rate on a 5 point scale were recorded:

1.1 Review construction materials, methods, and sequences within the context of the environment and technology.	4.87
1.2 Describe Mechanical and Electrical Systems.	4.03
1.3 Explain the construction life cycle processes from initiation to deconstruction.	4.73
1.4 Review the roles of all stakeholders in a construction project.	4.43
1.5 Identify applicable Building Codes and other construction regulations.	4.17
1.6 Discuss different project delivery systems.	4.70
1.7 Identify construction best practices.	4.57
1.8 Describe the principles of sustainable construction & development.	4.50
1.9 Review the financial health of a construction project.	4.47
1.10 Schedule construction activities.	4.57
1.11 Create solutions to provide temporary support during construction.	4.60
1.12 Assess various structural systems.	4.43
1.13 Prepare construction project documents for construction phase.	4.37
1.14 Prepare procedures to identify, evaluate and manage risk.	4.40
1.15 Assess the job site safety program.	4.50
1.16 Inspect work for quality assurance and control purposes.	4.47
1.17 Organize LEED Green Building activities.	4.00
1.18 Evaluate submittal documents.	4.27
1.19 Prepare the construction schedule.	4.60
1.20 Estimate the cost of construction work using various methods.	4.63
1.21 Manage their time effectively.	4.60

Of the 21 learning outcomes evaluated during the Spring 2013 semester the following mean response rate on a 5 point scale were recorded:

1.1 Review construction materials, methods, and sequences within the context of the environment and technology.	4.28
1.2 Describe Mechanical and Electrical Systems.	3.50
1.3 Explain the construction life cycle processes from initiation to deconstruction.	4.39
1.4 Review the roles of all stakeholders in a construction project.	4.28
1.5 Identify applicable Building Codes and other construction regulations.	3.28
1.6 Discuss different project delivery systems.	4.22
1.7 Identify construction best practices.	3.89
1.8 Describe the principles of sustainable construction & development.	3.67
1.9 Review the financial health of a construction project.	3.72
1.10 Schedule construction activities.	3.89
1.11 Create solutions to provide temporary support during construction.	3.89
1.12 Assess various structural systems.	3.89
1.13 Prepare construction project documents for construction phase.	4.06
1.14 Prepare procedures to identify, evaluate and manage risk.	3.94
1.15 Assess the job site safety program.	3.89
1.16 Inspect work for quality assurance and control purposes.	3.78
1.17 Organize LEED Green Building activities.	3.00
1.18 Evaluate submittal documents.	3.39
1.19 Prepare the construction schedule.	3.83
1.20 Estimate the cost of construction work using various methods.	4.17
1.21 Manage their time effectively.	4.28

Of the 21 learning outcomes evaluated during the Summer 2013 semester the following mean response rate on a 5 point scale were recorded:

1.1 Review construction materials, methods, and sequences within the context of the environment and technology.	4.48
1.2 Describe Mechanical and Electrical Systems.	3.74
1.3 Explain the construction life cycle processes from initiation to deconstruction.	4.13
1.4 Review the roles of all stakeholders in a construction project.	4.13
1.5 Identify applicable Building Codes and other construction regulations.	3.70
1.6 Discuss different project delivery systems.	4.43

1.7 Identify construction best practices.	4.35
1.8 Describe the principles of sustainable construction & development.	3.83
1.9 Review the financial health of a construction project.	3.96
1.10 Schedule construction activities.	4.26
1.11 Create solutions to provide temporary support during construction.	4.04
1.12 Assess various structural systems.	4.30
1.13 Prepare construction project documents for construction phase.	4.30
1.14 Prepare procedures to identify, evaluate and manage risk.	4.17
1.15 Assess the job site safety program.	4.30
1.16 Inspect work for quality assurance and control purposes.	4.09
1.17 Organize LEED Green Building activities.	3.43
1.18 Evaluate submittal documents.	4.00
1.19 Prepare the construction schedule.	4.26
1.20 Estimate the cost of construction work using various methods.	4.48
1.21 Manage their time effectively.	4.30

How did you use findings for improvement?

The annual quality improvement meeting was held on Wednesday May 1, 2013 at 11:30 in the large conference room. Prior to meeting faculty were given one week to review data collected from the following assessment exercises:

1. Notes from exit interviews with graduating seniors
 1. Spring 2012
 2. Summer 2012
 3. Fall 2012
2. Exit surveys completed by graduating seniors
 1. Spring 2012
 2. Summer 2012
 3. Fall 2012

The BSCI faculty was asked to identify any specific issues identified from the various assessment exercises mentioned previously. No specific issues were identified by the faculty that currently require addressing. The lowest evaluation score recorded was 3.0 for the learning outcome: *Organize LEED Green Building activities*. This graduating class received no formal instruction in sustainable construction. Following a major curriculum review carried out between 2009 & 2011 a one credit hour class in sustainable construction was added. The first cohort that will graduate from the program having taken the pre-building science class BSCI 2100 - Introduction to Sustainable Construction will be in Fall 2014. It is anticipated that the evaluations for this outcome will improve significantly after Fall 2014.

Additional Comments

There is still some concern among faculty and students that the list of company and project documents included in thesis might not be appropriate. Professors Mark Tatum and Mike Thompson reviewed the current list with a view to incorporating changes as part of a revision of the thesis being conducted during the 2013/14 academic year.

Expected Outcome 2: Appreciation of the arts and sciences and an awareness of the social and global consequences of construction operations.

The graduating Building Science major will have an appreciation of the arts and sciences and an awareness of the social and global consequences of construction operations.

Assessment Method 1: Evaluation of student's performance in BSCI 4980

Assessment Method Description

Evaluation of student's performance in BSCI 4980 Building Science Thesis. Course description:

Individual project demonstrating mastery of curriculum content through the application of skills/knowledge to a theoretical construction company and project. Requires a written thesis and oral defense of work.

Based on an evaluation of the students' performance in the thesis and subsequent meeting faculty and/or industry evaluators are asked to evaluate the student on how strongly they agree (on a five point scale) they have met the learning outcome:

4.3 Use practical experience to acquire knowledge

A grading rubric for thesis was also introduced for the thesis during the 2010/11 academic year. The Thesis is graded across 10 grading criteria and an average percentage for each criteria is recorded. The criteria used to measure this outcome is:

LEED Assessment

All graduating students are assessed this is approximately 90 students.

Findings

This expected outcome is evaluated by one learning outcome that is individually evaluated by faculty or industry graders. The learning outcome evaluated by faculty graders during the Fall 2012 semester the mean response rate on a 5 point scale was 4.29. The learning outcome evaluated by faculty graders during the Spring 2013 semester the mean response rate on a 5 point scale was 4.33. The learning outcome evaluated by faculty graders during the Summer 2013 semester the mean response rate on a 5 point scale was 4.06.

This expected outcome is also evaluated by one grading criteria that is individually evaluated by faculty or industry graders. For the criteria graded by faculty during Fall 2012 the following mean percentage scores were recorded:

LEED Assessment 87.44%

For the criteria graded by faculty during Spring 2013 the following mean percentage scores were recorded:

LEED Assessment 88.77%

For the criteria graded by faculty during Summer 2013 the following mean percentage scores were recorded:

LEED Assessment 89.22%

How did you use findings for improvement?

The annual quality improvement meeting was held on Wednesday May 1. Prior to meeting faculty were given one week to review data collected from the following assessment exercises:

1. Student's performance in BSCI 4980 Building Science Thesis (Grading Rubric)
 1. Spring 2012
 2. Summer 2012
 3. Fall 2012
2. Faculty assessment of Learning Objectives and Outcomes for Undergraduate Program by evaluation of performance in the thesis
 1. Spring 2012
 2. Summer 2012
 3. Fall 2012

The BSCI faculty was asked to identify any specific issues identified from the various assessment exercises mentioned previously. No specific issues were identified by the

faculty that currently require addressing. The consistent performance of students in the thesis is most likely due to the introducing of the grading rubric following concerns expressed by students as part of the 2011 annual assessment report.

Additional Comments

At a faculty meeting on September 23 the faculty decided to conduct a major review of BSCI 4980 Building Science Thesis. This review has been prompted by the introduction of new learning outcomes based standards by our accreditation agency, the American Council for Construction Education and the need to teach and assess the class in a more manageable way. The chair of undergraduate studies, Ben Farrow has put together a committee that will re-structure the thesis to address many of the 21 ACCE learning outcomes. The committee will present its draft proposal to the faculty and industry by the end of the spring 2014 semester with a view to teaching the "new" thesis for the first time in fall 2015.

In the short term the thesis class will be taught and assessed in sections of ten students taught by a team of faculty (2 credit hours per faculty) effective fall 2014. We will continue with the current thesis assignment and assessment criteria. At the same time faculty will be given autonomy to alter the thesis instructions to facilitate grading of the thesis in a timely and appropriate manner.

Assessment Method 2: Graduating Seniors Exit Survey & Interview

Assessment Method Description

An online Exit Survey is sent to graduating seniors each semester. Students are asked how strongly they agree (on a five point scale) they have met the 8 McWhorter School of Building Science Learning outcomes that measure this objective:

- 4.1 Recognize career opportunities available.
- 4.2 Recognize the influence of the arts and sciences in the evolution of buildings.
- 4.3 Use practical experience to acquire knowledge.
- 4.4 Practice a commitment to lifelong learning.
- 4.5 Students will be informed and engaged citizens of the United States and the world.
- 4.6 Students will understand and appreciate the diversity of and within societies of the United States and the world.
- 4.7 Students will understand and appreciate methods and issues of science and technology.
- 4.8 Students will understand and appreciate the arts and aesthetics as ways of knowing and engaging with the world.

In addition the school head meets with all graduating students in small groups to identify good and bad experiences during their time in the program and any suggestions for improvement.

Findings

This expected outcome is evaluated by 8 learning outcomes that are individually evaluated by graduating seniors. Of the 8 learning outcomes evaluated during the Fall 2012 semester the mean response rate on a 5 point scale was as follows:

4.1 Recognize career opportunities available.	4.63
4.2 Recognize the influence of the arts and sciences in the evolution of buildings.	4.33
4.3 Use practical experience to acquire knowledge.	4.60
4.4 Practice a commitment to lifelong learning.	4.50
4.5 Students will be informed and engaged citizens of the United States and the world.	4.50
4.6 Students will understand and appreciate the diversity of and within societies of the United States and the world.	4.30
4.7 Students will understand and appreciate methods and issues of science and technology.	4.43
4.8 Students will understand and appreciate the arts and aesthetics as ways of knowing and engaging with the world.	4.27

Of the 8 learning outcomes evaluated during the Spring 2013 semester the mean response rate on a 5 point scale was as follows:

4.1 Recognize career opportunities available.	4.28
4.2 Recognize the influence of the arts and sciences in the evolution of buildings.	3.83
4.3 Use practical experience to acquire knowledge.	4.28
4.4 Practice a commitment to lifelong learning.	4.00
4.5 Students will be informed and engaged citizens of the United States and the world.	3.83
4.6 Students will understand and appreciate the diversity of and within societies of the United States and the world.	3.50
4.7 Students will understand and appreciate methods and issues of science and technology.	3.78
4.8 Students will understand and appreciate the arts and aesthetics as ways of knowing and engaging with the world.	3.67

Of the 8 learning outcomes evaluated during the Summer 2013 semester the mean response rate on a 5 point scale was as follows:

4.1 Recognize career opportunities available.	4.43
4.2 Recognize the influence of the arts and sciences in the evolution of buildings.	3.83
4.3 Use practical experience to acquire knowledge.	4.52
4.4 Practice a commitment to lifelong learning.	4.52
4.5 Students will be informed and engaged citizens of the United States and the world.	4.48
4.6 Students will understand and appreciate the diversity of and within societies of the United States and the world.	4.52
4.7 Students will understand and appreciate methods and issues of science and technology.	4.36
4.8 Students will understand and appreciate the arts and aesthetics as ways of knowing and engaging with the world.	4.17

How did you use findings for improvement?

The annual quality improvement meeting was held on Wednesday May 1, at 11:30 in the large conference room. Prior to meeting faculty were given one week to review data collected from the following assessment exercises:

1. Notes from exit interviews with graduating seniors
 1. Spring 2012
 2. Summer 2012
 3. Fall 2012
2. Exit surveys completed by graduating seniors
 1. Spring 2012
 2. Summer 2012
 3. Fall 2012

The BSCI faculty was asked to identify any specific issues identified from the various assessment exercises mentioned previously. No specific issues were identified by the faculty that currently require addressing. Previous concerns raised by students regarding the fairness of grading the thesis have reduced considerably and may well be due to the introduction of the grading rubric as a result of earlier annual assessment activities.

Additional Comments

Expected Outcome 3: Effectively participate in the administration and management of construction company operations

After review and analysis of business documentation, the graduating Building Science major will be able to effectively participate in the administration and management of construction company operations.

Assessment Method 1: Evaluation of student's performance in BSCI 4980

Assessment Method Description

Evaluation of student's performance in BSCI 4980 Building Science Thesis. Course description:

Individual project demonstrating mastery of curriculum content through the application of skills/knowledge to a theoretical construction company and project. Requires a written thesis and oral defense of work.

Based on an evaluation of the students performance in the thesis and subsequent meeting faculty and/or industry evaluators are asked to evaluate the student on how strongly they agree (on a five point scale) they have met the 4 learning outcomes that measure this objective:

3.1	Describe the organization of construction companies
3.2	Describe insurance, bonds and contracts
3.3	Discuss the basics of contract law and litigation
3.5	Analyze the financial set up of a construction company

A grading rubric for thesis was also introduced for the thesis during the 2010/11 academic year. The Thesis is graded across 10 grading criteria and an average percentage for each criteria is recorded. The 2 criteria used to measure this outcome are:

2. The Thesis and Company Items

3. Financial

All graduating students are assessed this is approximately 90 students.

Findings

This expected outcome is evaluated by 4 learning outcomes that are individually evaluated by faculty or industry graders. Of the 4 learning outcomes evaluated by faculty graders during the Fall 2012 semester mean response rate on a 5 point scale were as follows:

3.1	Describe the organization of construction companies	4.57
3.2	Describe insurance, bonds and contracts	4.43
3.3	Discuss the basics of contract law and litigation	4.47
3.5	Analyze the financial set up of a construction company	4.37

Of the 4 learning outcomes evaluated by faculty during the Spring 2013 semester mean response rate on a 5 point scale were as follows:

3.1	Describe the organization of construction companies	4.00
3.2	Describe insurance, bonds and contracts	3.78
3.3	Discuss the basics of contract law and litigation	4.00
3.5	Analyze the financial set up of a construction company	3.94

Of the 4 learning outcomes evaluated during the Summer 2013 semester mean response rate on a 5 point scale were as follows:

3.1	Describe the organization of construction companies	4.52
3.2	Describe insurance, bonds and contracts	4.04
3.3	Discuss the basics of contract law and litigation	4.13
3.5	Analyze the financial set up of a construction company	4.00

This expected outcome is also evaluated by 2 of the 10 grading criteria that are individually evaluated by faculty or industry graders. Of the 2 criteria graded by faculty during Fall 2012 the following mean percentage scores were as follows:

- 2. The Thesis and Company Items 82.17%
- 3. Financial 86.18%

Of the 2 criteria graded by faculty during Spring 2013 the following mean percentage scores were as follows:

- 2. The Thesis and Company Items 82.57%
- 3. Financial 79.17%

Of the 2 criteria graded by faculty during Summer 2013 the following mean percentage scores were as follows:

2. The Thesis and Company Items 78.69%

3. Financial 76.94%

How did you use findings for improvement?

The annual quality improvement meeting was held on Wednesday May 1. Prior to meeting faculty were given one week to review data collected from the following assessment exercises:

1. Student's performance in BSCI 4980 Building Science Thesis (Grading Rubric)
 1. Spring 2012
 2. Summer 2012
 3. Fall 2012
2. Faculty assessment of Learning Objectives and Outcomes for Undergraduate Program by evaluation of performance in the thesis
 1. Spring 2012
 2. Summer 2012
 3. Fall 2012

The BSCI faculty was asked to identify any specific issues identified from the various assessment exercises mentioned previously. No specific issues were identified by the faculty that currently require addressing. The consistent performance of students in the thesis is most likely due to the introducing of the grading rubric following concerns expressed by students as part of the 2011 annual assessment report.

Additional Comments

At a faculty meeting on September 23 the faculty decided to conduct a major review of BSCI 4980 Building Science Thesis. This review has been prompted by the introduction of new learning outcomes based standards by our accreditation agency, the American Council for Construction Education and the need to teach and assess the class in a more manageable way. The chair of undergraduate studies, Ben Farrow has put together a committee that will re-structure the thesis to address many of the 21 ACCE learning outcomes. The committee will present its draft proposal to the faculty and industry by the end of the spring 2014 semester with a view to teaching the "new" thesis for the first time in fall 2015.

In the short term the thesis class will be taught and assessed in sections of ten students taught by a team of faculty (2 credit hours per faculty) effective fall 2014. We will continue with the current thesis assignment and assessment criteria. At the same time faculty will be given autonomy to alter the thesis instructions to facilitate grading of the thesis in a timely and appropriate manner.

Assessment Method 2: Graduating Seniors Exit Survey & Interview

Assessment Method Description

An online Exit Survey is sent to graduating seniors each semester. Students are asked how strongly they agree (on a five point scale) they have met the 6 McWhorter School of Building Science Learning outcomes that measure this objective:

3.1 Describe the organization of construction companies.

3.2 Describe insurance, bonds and contracts.

3.3 Discuss the basics of contract law and litigations.

3.4 Describe the organization of construction companies.

3.5 Analyze the financial set up of a construction company.

3.6 Judge the ethics of business and personal activities.

In addition the school head meets with all graduating students in small groups to identify good and bad experiences during their time in the program and any suggestions for improvement.

Findings

This expected outcome is evaluated by 6 learning outcomes that are individually evaluated by graduating seniors. Of the 6 learning outcomes evaluated during the Fall 2012 semester the following mean response rates were recorded:

3.1 Describe the organization of construction companies.	4.57
3.2 Describe insurance, bonds and contracts.	4.43
3.3 Discuss the basics of contract law and litigations.	4.47
3.4 Describe the organization of construction companies.	4.57
3.5 Analyze the financial set up of a construction company.	4.37
3.6 Judge the ethics of business and personal activities.	4.53

Of the 6 learning outcomes evaluated during the Spring 2013 semester the following mean response rates were recorded:

3.1 Describe the organization of construction companies.	4.00
3.2 Describe insurance, bonds and contracts.	3.78
3.3 Discuss the basics of contract law and litigations.	4.00
3.4 Describe the organization of construction companies.	4.06
3.5 Analyze the financial set up of a construction company.	3.94
3.6 Judge the ethics of business and personal activities.	4.28

Of the 6 learning outcomes evaluated during the Summer 2013 semester the following mean response rates were recorded:

3.1 Describe the organization of construction companies.	4.52
3.2 Describe insurance, bonds and contracts.	4.04
3.3 Discuss the basics of contract law and litigations.	4.13
3.4 Describe the organization of construction companies.	4.35
3.5 Analyze the financial set up of a construction company.	4.00
3.6 Judge the ethics of business and personal activities.	4.30

How did you use findings for improvement?

The annual quality improvement meeting was held on Wednesday May 1, at 11:30 in the large conference room. Prior to meeting faculty were given one week to review data collected from the following assessment exercises:

1. Notes from exit interviews with graduating seniors
 1. Spring 2012
 2. Summer 2012
 3. Fall 2012
2. Exit surveys completed by graduating seniors
 1. Spring 2012
 2. Summer 2012
 3. Fall 2012

The BSCI faculty was asked to identify any specific issues identified from the various assessment exercises mentioned previously. No specific issues were identified by the faculty that currently require addressing. Previous concerns raised by students in the 2011 annual assessment report regarding cheating were not raised in either the exit surveys or exit interviews. The issuing of an official notification to students addressing the issue of cheating was given to students entering the program since the fall of 2011 may well have helped in this matter.

Additional Comments

Expected Outcome 4: Operate & communicate effectively in diverse settings

After evaluation of the specific circumstances, the graduating Building Science major will be able to identify appropriate methods to operate & communicate effectively in diverse settings

Assessment Method 1: Evaluation of student's performance in BSCI 4980

Assessment Method Description

Evaluation of student's performance in BSCI 4980 Building Science Thesis. Course description:

Individual project demonstrating mastery of curriculum content through the application of skills/knowledge to a theoretical construction company and project. Requires a written thesis and oral defense of work.

Based on an evaluation of the students performance in the thesis and subsequent meeting faculty and/or industry evaluators are asked to evaluate the student on how strongly they agree (on a five point scale) they have met the 5 learning outcomes that measure this objective:

2.1	Apply written, oral and visual means to communicate effectively in diverse settings
2.2	Employ technology as an effective communication, visualization and management tool
2.9	Students will be able to read analytically and critically
2.12	Students will be able to apply simple mathematical methods to the solution of real-world problems.
2.13	Students will be able to select and use techniques and methods to solve open-ended, ill-defined or multistep problems.

A grading rubric for thesis was also introduced for the thesis during the 2010/11 academic year. The Thesis is graded across 10 grading criteria and an average percentage for each criteria is recorded. The criteria used to measure this outcome is:

1. General Overview

All graduating students are assessed this is approximately 90 students.

Findings

This expected outcome is evaluated by 5 learning outcomes that are individually evaluated by faculty and/or industry graders. Of the 5 learning outcomes evaluated during the Fall 2012 semester the following mean response rates were recorded:

2.1	Apply written, oral and visual means to communicate effectively in diverse settings	4.12
2.2	Employ technology as an effective communication, visualization and management tool	4.24
2.9	Students will be able to read analytically and critically	3.76
2.12	Students will be able to apply simple mathematical methods to the solution of real-world problems.	4.21
2.13	Students will be able to select and use techniques and methods to solve open-ended, ill-defined or multistep problems.	3.85

Of the 5 learning outcomes evaluated during the Spring 2013 semester the following mean response rates were recorded:

2.1	Apply written, oral and visual means to communicate effectively in diverse settings	4.04
2.2	Employ technology as an effective communication, visualization and management tool	4.22
2.9	Students will be able to read analytically and critically	4.07
2.12	Students will be able to apply simple mathematical methods to the solution of real-world problems.	4.24
2.13	Students will be able to select and use techniques and methods to solve open-ended, ill-defined or multistep problems.	4.15

Of the 5 learning outcomes evaluated during the Summer 2013 semester the following mean response rates were recorded:

2.1	Apply written, oral and visual means to communicate effectively in diverse settings	4.22
2.2	Employ technology as an effective communication, visualization and management tool	4.17
2.9	Students will be able to read analytically and critically	3.94
2.12	Students will be able to apply simple mathematical methods to the solution of real-world problems.	4.00
2.13	Students will be able to select and use techniques and methods to solve open-ended, ill-defined or multistep problems.	3.78

This expected outcome is also evaluated by 1 of the 10 grading criteria that are individually evaluated by faculty or industry graders. For the grading criteria graded by faculty during Fall 2012, the mean percentage score was:

1. General Overview 88.16%

For the grading criteria graded by faculty during Spring 2013, the mean percentage score was:

1. General Overview 88.87%

For the grading criteria graded by faculty during Summer 2013, the mean percentage score was:

1. General Overview 86.40%

How did you use findings for improvement?

The annual quality improvement meeting was held on Wednesday May 1. Prior to meeting faculty were given one week to review data collected from the following assessment exercises:

1. Student's performance in BSCI 4980 Building Science Thesis (Grading Rubric)
 1. Spring 2012
 2. Summer 2012
 3. Fall 2012
 - 4.
2. Faculty assessment of Learning Objectives and Outcomes for Undergraduate Program by evaluation of performance in the thesis
 1. Spring 2012
 2. Summer 2012
 3. Fall 2012

The BSCI faculty was asked to identify any specific issues identified from the various assessment exercises mentioned previously. No specific issues were identified by the faculty that currently require addressing. The consistent performance of students in the thesis is most likely due to the introducing of the grading rubric following concerns expressed by students as part of the 2011 annual assessment report.

Additional Comments

At a faculty meeting on September 23 the faculty decided to conduct a major review of BSCI 4980 Building Science Thesis. This review has been prompted by the introduction of new learning outcomes based standards by our accreditation agency, the American

Council for Construction Education and the need to teach and assess the class in a more manageable way. The chair of undergraduate studies, Ben Farrow has put together a committee that will re-structure the thesis to address many of the 21 ACCE learning outcomes. The committee will present its draft proposal to the faculty and industry by the end of the spring 2014 semester with a view to teaching the "new" thesis for the first time in fall 2015.

In the short term the thesis class will be taught and assessed in sections of ten students taught by a team of faculty (2 credit hours per faculty) effective fall 2014. We will continue with the current thesis assignment and assessment criteria. At the same time faculty will be given autonomy to alter the thesis instructions to facilitate grading of the thesis in a timely and appropriate manner.

Assessment Method 2: Graduating Seniors Exit Survey & Interview

Assessment Method Description

An online Exit Survey is sent to graduating seniors each semester. Students are asked how strongly they agree (on a five point scale) they have met the 13 McWhorter School of Building Science Learning outcomes that measure this objective:

- 2.1 Apply written, oral, and visual means to communicate effectively in diverse settings.
- 2.2 Employ technology as an effective communication, visualization and management tool.
- 2.3 Operate in teams, including those of diverse composition.
- 2.4 Formulate resolutions to difficult issues creatively by employing multiple systems and tools.
- 2.5 Solve conflicts by personal communication.
- 2.6 Operate effectively in business meetings.
- 2.7 Demonstrate the ability to negotiate construction issues.
- 2.8 Students will be information literate.
- 2.9 Students will be able to read analytically and critically.
- 2.10 Students will be able to critique an argument effectively.
- 2.11 Students will be able to construct an effective argument.

2.12 Students will be able to apply simple mathematical methods to the solution of real-world problems.

2.13 Students will be able to select and use techniques and methods to solve open-ended, ill-defined or multi step problems.

In addition the school head meets with all graduating students in small groups to identify good and bad experiences during their time in the program and any suggestions for improvement.

Findings

This expected outcome is evaluated by 13 learning outcomes that are individually evaluated by graduating seniors. Of the 13 learning outcomes evaluated during the Fall 2012 semester the mean response rate on a 5 point scale are as follows:

2.1 Apply written, oral, and visual means to communicate effectively in diverse settings.	4.57
2.2 Employ technology as an effective communication, visualization and management tool.	4.60
2.3 Operate in teams, including those of diverse composition.	4.67
2.4 Formulate resolutions to difficult issues creatively by employing multiple systems and tools.	4.33
2.5 Solve conflicts by personal communication.	4.37
2.6 Operate effectively in business meetings.	4.27
2.7 Demonstrate the ability to negotiate construction issues.	4.43
2.8 Students will be information literate.	4.53
2.9 Students will be able to read analytically and critically.	4.50
2.10 Students will be able to critique an argument effectively.	4.47
2.11 Students will be able to construct an effective argument.	4.50
2.12 Students will be able to apply simple mathematical methods to the solution of real-world problems.	4.57
2.13 Students will be able to select and use techniques and methods to solve open-ended, ill-defined or multi step problems.	4.57

Of the 13 learning outcomes evaluated during the Spring 2013 semester the mean response rate on a 5 point scale are as follows:

2.1 Apply written, oral, and visual means to communicate effectively in diverse settings.	4.28
2.2 Employ technology as an effective communication, visualization and management tool.	4.28
2.3 Operate in teams, including those of diverse composition.	4.48
2.4 Formulate resolutions to difficult issues creatively by employing multiple systems and tools.	4.39
2.5 Solve conflicts by personal communication.	4.52
2.6 Operate effectively in business meetings.	4.35
2.7 Demonstrate the ability to negotiate construction issues.	4.39
2.8 Students will be information literate.	4.30
2.9 Students will be able to read analytically and critically.	4.39
2.10 Students will be able to critique an argument effectively.	4.35
2.11 Students will be able to construct an effective argument.	4.11
2.12 Students will be able to apply simple mathematical methods to the solution of real-world problems.	3.89
2.13 Students will be able to select and use techniques and methods to solve open-ended, ill-defined or multi step problems.	3.83

Of the 13 learning outcomes evaluated during the Summer 2013 semester the mean response rate on a 5 point scale are as follows:

2.1 Apply written, oral, and visual means to communicate effectively in diverse settings.	4.43
2.2 Employ technology as an effective communication, visualization and management tool.	4.39
2.3 Operate in teams, including those of diverse composition.	4.22
2.4 Formulate resolutions to difficult issues creatively by employing multiple systems and tools.	4.11
2.5 Solve conflicts by personal communication.	4.24
2.6 Operate effectively in business meetings.	4.00
2.7 Demonstrate the ability to negotiate construction issues.	4.00
2.8 Students will be information literate.	4.06
2.9 Students will be able to read analytically and critically.	3.94
2.10 Students will be able to critique an argument effectively.	4.06
2.11 Students will be able to construct an effective argument.	4.35
2.12 Students will be able to apply simple mathematical methods to the solution of real-world problems.	4.48
2.13 Students will be able to select and use techniques and methods to solve open-ended, ill-defined or multi step problems.	4.35

How did you use findings for improvement?

The annual quality improvement meeting was held on Wednesday May 1, at 11:30 in the large conference room. Prior to meeting faculty were given one week to review data collected from the following assessment exercises:

1. Notes from exit interviews with graduating seniors
 1. Spring 2012
 2. Summer 2012
 3. Fall 2012
2. Exit surveys completed by graduating seniors
 1. Spring 2012
 2. Summer 2012
 3. Fall 2012

The BSCI faculty was asked to identify any specific issues identified from the various assessment exercises mentioned previously. No specific issues were identified by the faculty that currently require addressing.

Additional Comments