**Course:** BCN4944 – Construction Management Internship / BCN4709 - Construction Project Management Capstone

Instructors: Jaime Oliver / Andrew Barnes

## **Evaluation of Assessment Data:**

### **Indirect Measure**

The Indirect Measure for SLO #1 was assessed using the Graduating Senior Exit Survey. An 77.2% ranking was achieved for this SLO in Spring 2025. The target for the indirect measure is 70% (3.5 in the Likert scale raw score in between moderately and mostly proficient). Indirect measurement assessment met the target during terms as shown in the table below.

Term	ACCE SLO	Raw Score (1-5)	Number	Percent
F 2023	SLO #1 – create written communications appropriate to the	4.39	33	87.8%
S 2024		4.13	45	82.6%
F 2024		4.00	22	80%
S 2025		3.86	29	77.2%

#### **Direct Measures**

The Direct Measures for SLO #1 consists of several written assignments. We used the mentored project proposal as a direct measure in Spring 2025. The table below shows the average grade percentages with the Likert scale raw score for the direct assessments.

Term	Number	Criteria	Average Percent (Likert Scale 1-5)	Target Percent
S 2024	20	Written Report #7	95% (4.75)	70%
Su 2024	77	Written Report #5	86.6% (4.33)	70%
F 2024	11	Written Report #8	92.6% (4.63)	70%
S 2025	29	Mentored Project Proposal	92.4% (4.62)	70%

**Course:** BCN4709 – Construction Project Management Capstone

## Instructors: Andrew Barnes

## **Evaluation of Assessment Data:**

### Indirect Measure

The Indirect Measure for SLO #1 was assessed using the Graduating Senior Exit Survey. An 83.4% ranking was achieved for this SLO in Spring 2025. The target for the indirect measure is 70% (3.5 on the Likert scale raw score between moderately and mostly proficient). Indirect measurement assessment met the target during terms as shown in the table below.

Term	ACCE SLO	Raw Score (1-5)	Number	Percent
F 2023	SLO #2 – Create oral presentations appropriate to the	4.24	33	84.8%
S 2024		4.27	45	85.4%
F 2024		4.05	22	81%
S 2025		4.17	29	83.4%

#### **Direct Measures**

The Direct Measures for SLO #2 consist of a series of individual presentations over the semester, including quality control and project management, safety, scheduling, and final project and presentation. The table below shows the average grade percentages with the Likert scale raw score for the direct assessments.

Term	Number	Criteria	Average Percent (Likert Scale 1-5)	Target Percent
F 2023	31	Presentations	76.6% (3.83)	70%
S 2024	45	Presentations	94.2% (4.71)	70%
F 2024	23	Presentations	93.2% (4.66)	70%
S 2025	29	Presentations	81.2% (4.06)	70%

**Course:** BCN4730 – Construction Safety

Instructors: Tamara Baker

## **Evaluation of Assessment Data:**

### Indirect Measure

The Indirect Measure for SLO #3 was assessed using the Graduating Senior Exit Survey. A 71.8% ranking was achieved for this SLO in Spring 2025. The target for the indirect measure is 70% (3.5 on the Likert scale raw score between moderately and mostly proficient). We missed the target in Fall 2024 indirect measurement below 70%. Indirect measurement assessment met the target during other terms, as shown in the table below.

Term	ACCE SLO	Raw Score (1-5)	Number	Percent
F 2023	SLO #3 – Create a construction project safety plan	4.00	33	87.8%
S 2024		3.91	45	78.2%
F 2024		3.45	22	69%
S 2025		3.59	29	71.8%

#### **Direct Measures**

The Direct Measures for SLO #3 consists of a written construction safety plan assignment. The table below shows the average grade percentages with the Likert scale raw score for the direct assessments.

Term	Number	Criteria	Average Percent (Likert Scale 1-5)	Target Percent
F 2024	18	A Written Construction Safety Plan Assignment	96.6% (4.83)	70%
S 2025	41	A Written Construction Safety Plan Assignment	93.68% (4.68)	70%

## **Course:** BCN4612 – Advanced Construction Estimating

## Instructors: Aiyin Jiang

## **Evaluation of Assessment Data:**

## Indirect Measure

The Indirect Measure for SLO #4 was assessed using the Graduating Senior Exit Survey. A 78% ranking was achieved for this SLO in Spring 2025. The target for the indirect measure is 70% (3.5 on the Likert scale raw score between moderately and mostly proficient). We missed the target in Fall 2024 indirect measurement below 70%. Indirect measurement assessment met the target during other terms as shown in the table below.

Term	ACCE SLO	Raw Score (1-5)	Number	Percent
F 2023	SLO #4 – Create construction project cost estimates	3.76	33	75.2%
S 2024		3.71	45	74.2%
F 2024		3.77	22	75.4%
S 2025		3.9	29	78%

#### **Direct Measures**

The Direct Measure for SLO #4 consists of multiple written cost estimate report assignments over the semester. Multiple divisions including earthwork, concrete, wood, and electric were included in the SLO #4. The table below shows the average grade percentages with the Likert scale raw score for the direct assessments. This report contains examples of the assignments. More examples are available on request.

Term	Number	Criteria	Average Percent (Likert Scale 1-5)	Target Percent
S 2024	46	Written cost estimate reports	83% (4.15)	70%
F 2024	18	Written cost estimate reports	87.8% (4.39)	70%
S 2025	32	Written cost estimate reports	92.5% (4.62)	70%

**Course:** BCN4720C – Construction Project Planning and Scheduling

## Instructors: Jonghoon Kim

### **Evaluation of Assessment Data:**

### Indirect Measure

The Indirect Measure for SLO #5 was assessed using the Graduating Senior Exit Survey. A 74.4% ranking was achieved for this SLO in Spring 2025. The target for the indirect measure is 70% (for example, 3.5 in the Likert scale raw score is between moderately and mostly proficient). Indirect measurement assessment met the target during terms, as shown in the table below.

Term	ACCE SLO	Raw Score (1-5)	Number	Percent
F 2023		3.82	33	87.8%
S 2024	SLO #5 Create construction project schedules	3.64	45	72.8%
F 2024	SLO #5 – Create construction project schedules	3.64	22	72.8%
S 2025		3.72	29	74.4%

#### **Direct Measures**

The Direct Measures for SLO #5 comprise a comprehensive final project report. The table below shows the average grade percentages with the Likert scale raw score for the direct assessments.

Term	Number	Criteria	Average Percent (Likert Scale 1-5)	Target Percent
F 2023	31	A final report	89% (4.45)	70%
S 2024	35	A final report	90% (4.5)	70%
F 2024	39	A final report	91% (4.55)	70%
S 2025	29	A final report	78.4% (3.92)	70%

Course: BCN4708 – Construction Documents and Contracts

## Instructors: Edward Whelan

### **Evaluation of Assessment Data:**

### Indirect Measure

The Indirect Measure for SLO #6 was assessed using the Graduating Senior Exit Survey. A 86.8% ranking was achieved for this SLO in Spring 2025. The target for the indirect measure is 70% (3.5 on the Likert scale raw score between moderately and mostly proficient). Indirect measurement assessment met the target during the terms as shown in the table below.

Term	ACCE SLO	Raw Score (1-5)	Number	Percent
F 2023		4.52	33	90.4%
S 2024	SLO #6 – Analyze professional decisions based on ethical	4.58	45	91.6%
F 2024		4.32	22	86.4%
S 2025		4.34	29	86.8%

#### **Direct Measures**

The Direct Measures for SLO #6 consist of short essay answer questions and multiple-choice questions in Quiz - ethic. The table below shows the average grade percentages with the Likert scale raw score for the direct assessments.

Term	Number	Criteria	Average Percent (Likert Scale 1-5)	Target Percent
S 2024	29	Quiz - Ethic	86.2% (4.31)	70%
F 2024	38	Quiz - Ethic	87.6% (4.38)	70%
S 2025	38	Quiz - Ethic	86% (4.3)	70%

## Course: BCN3224 – Construction Techniques

## Instructors: Michele Lamarsh

## **Evaluation of Assessment Data:**

#### Indirect Measure

The Indirect Measure for SLO #7 was assessed using the Graduating Senior Exit Survey. An 78.6% ranking was achieved for this SLO in Spring 2025. The target for the indirect measure is 70% (3.5 on the Likert scale raw score between moderately and mostly proficient). Indirect measurement assessment met the target during the terms as shown in the table below.

Term	ACCE SLO	Raw Score (1-5)	Number	Percent
F 2023		4.18	33	83.6%
S 2024	SLO #7 – Analyze methods, materials, and equipment used to construct projects.	4.18	45	83.6%
F 2024		3.91	22	78.2%
S 2025		3.93	29	78.6%

#### **Direct Measures**

The Direct Measures for SLO #7 from a techniques analysis assignment from Spring 2025. The direct measures criteria was updated from exam questions to written assignment. The table below shows the average grade percentages with the Likert scale raw score for the direct assessments.

Term	Number	Criteria	Average Percent (Likert Scale 1-5)	Target Percent
S 2024	66	Exams	92% (4.6)	70%
F 2024	43	Exams	86% (4.3)	70%
S 2025	45	A techniques analysis assignment	69.96% (3.5)	70%

Course: BCN3782 – Introduction to Construction Computing

## Instructors: Ben Cashen

## **Evaluation of Assessment Data:**

#### Indirect Measure

The Indirect Measure for SLO #8 was assessed using the Graduating Senior Exit Survey. A 78.6% ranking was achieved for this SLO in Spring 2025. The target for the indirect measure is 70% (3.5 in the Likert scale raw score between moderately and mostly proficient). Indirect measurement assessment met the target during the terms as shown in the table below.

Term	ACCE SLO	Raw Score (1-5)	Number	Percent
F 2023	SLO #8 – Apply electronic based technology to manage the	4.24	33	84.8%
S 2024		4.11	45	82.2%
F 2024		4.18	22	83.6%
S 2025		3.93	29	78.6%

#### **Direct Measures**

The Direct Measures for SLO #8 consists of three assignments to meet the SLO #8 requirements. The table below shows the average grade percentages with the Likert scale scores for the direct assessments.

Term	Number	Criteria	Average Percent (Likert Scale 1-5)	Target Percent
S 2024	38	Assignments Average	92.3% (4.61)	70%
F 2024	48	Assignments Average	91.8% (4.59)	70%
S 2025	39	Assignments Average	93.54% (4.68)	70%

Course: BCN2280 - Surveying: Construction Layout

Instructors: Tamara Baker

## **Evaluation of Assessment Data:**

#### **Indirect Measure**

The Indirect Measure for SLO #9 was assessed using the Graduating Senior Exit Survey. A 73.8% ranking was achieved for this SLO in Spring 2025. The target for the indirect measure is 70% (3.5 on the Likert scale raw score between moderately and mostly proficient). We missed the target in Fall 2024 indirect measurement below 70%. Indirect measurement assessment met the target during other terms as shown in the table below.

Term	ACCE SLO	Raw Score (1-5)	Number	Percent
F 2023		3.88	33	77.6%
S 2024	SLO #9 – Apply basic surveying techniques for construction	3.62	45	72.4%
F 2024		3.45	22	69%
S 2025		3.69	29	73.8%

#### **Direct Measures**

The Direct Measures for SLO #9 consists of field surveying activity and lab report assignment. The table below shows the average grade percentages with the Likert scale raw score for the direct assessments.

Term	Number	Criteria	Average Percent (Likert Scale 1-5)	Target Percent
F 2023	32	Lab report	73.6% (3.68)	70%
S 2024	40	Lab report	92.6% (4.63)	70%
F 2024	40	Lab report	79.6% (3.98)	70%
5 2025	27	Lab Report	72.4% (3.62)	70%
S 2025	37	Exam Questions	83% (4.15)	70%

Course: BCN3611 – Construction Cost Estimating

## Instructors: Aiyin Jiang

## **Evaluation of Assessment Data:**

#### **Indirect Measure**

The Indirect Measure for SLO #10 was assessed using the Graduating Senior Exit Survey. An 78% ranking was achieved for this SLO in Spring 2025. The target for the indirect measure is 70% (3.5 on the Likert scale raw score between moderately and mostly proficient). Indirect measurement assessment met the target during the terms as shown in the table below.

Term	ACCE SLO	Raw Score (1-5)	Number	Percent
F 2023		4.33	33	86.6%
S 2024	SLO #10 – Understand different methods of project delivery and the roles and responsibilities of all constituencies involved in the design and construction process	4.18	45	83.6%
F 2024		3.91	22	78.2%
S 2025		3.9	29	78%

#### **Direct Measures**

The Direct Measures for SLO #10 consists of multiple quiz questions on the Canvas page. The table below shows the average grade percentages with the Likert scale raw score for the direct assessments.

Term	Number	Criteria	Average Percent (Likert Scale 1-5)	Target Percent
F 2023	40	Quiz	98.4% (4.92)	70%
S 2024	39	Quiz	98.4% (4.92)	70%
F 2024	42	Quiz	82.4% (4.12)	70%
S 2025	40	Quiz	90.6% (4.53)	70%

## Course: BCN4753 – Construction Finance and Cost Controls

## Instructors: Michele Lamarsh

## **Evaluation of Assessment Data:**

## **Indirect Measure**

The Indirect Measure for SLO #11 was assessed using the Graduating Senior Exit Survey. A 66.8% ranking was achieved for this SLO in Spring 2025. The target for the indirect measure is 70% (3.5 on the Likert scale raw score between moderately and mostly proficient). Indirect measurement assessment met the target during the terms, as shown in the table below. We acknowledge that the course subject is challenging, especially the calculation components, and the assessment result is very close to the target. The instructor of this course continuously improves the teaching materials and skills to improve the indirect measure.

Term	ACCE SLO	Raw Score (1-5)	Number	Percent
F 2023		3.52	33	70.4%
S 2024	SLO #11 – Understand construction accounting and cost control	3.51	45	70.2%
F 2024		3.5	22	70%
S 2025		3.34	29	66.8%

#### **Direct Measures**

The Direct Measures for SLO #11 consists of multiple questions in the exams. The exam covers a comprehensive understanding of construction accounting and cost control concepts and applications. The table below shows the average grade percentages with the Likert scale raw score for the direct assessments.

Term	Number	Criteria	Average Percent (Likert Scale 1-5)	Target Percent
F 2023	73	Exams	83% (4.15)	70%
F 2024	45	Exams	91% (4.55)	70%
S 2025	25	Exams	88.5% (4.425)	70%

Course: BCN3223C – Soils and Foundations

## Instructors: Dan Koo

### **Evaluation of Assessment Data:**

## **Indirect Measure**

The Indirect Measure for SLO #12 was assessed using the Graduating Senior Exit Survey. This SLO achieved an 77.2% ranking in Spring 2025. The target for the indirect measure is 70% (3.5 in the Likert scale raw score, which is between moderately and mostly proficient). The indirect measurement assessment met the target during the terms, as shown in the table below.

Term	ACCE SLO	Raw Score (1-5)	Number	Percent
F 2023		4.3	33	86%
S 2024	SLO #12 - Understand construction quality assurance and	4.22	45	84.4%
F 2024		3.91	22	78.2%
S 2025		3.86	29	77.2%

#### **Direct Measures**

The Direct Measures for SLO #12 consists of two assessment components, including quiz questions and a homework assignment. The table below shows the average grade percentages with the Likert scale raw score for the direct assessments.

Term	Number	Criteria	Average Percent (Likert Scale 1-5)	Target Percent
F 2023	65	Quiz & Exam	96.8% (4.84)	70%
1 2023	05	Homework	56% (2.8)	70%
S 2024	31	Quiz & Exam	83.8% (4.19)	70%
5 2024	51	Homework	60% (3.0)	70%
E 2024	25	Quiz & Exam	89% (4.45)	70%
F 2024	35	Homework	61% (3.05)	70%
5,2025	55	Quiz	88% (4.4)	70%
S 2025	55	Homework	69% (3.45)	70%

The department decided that the overall average of the total grades should be at least 70%. The Indirect Measure was above the target, and the Direct Measure was below the target. The homework assignment grade is close to the 70% target and still needs improvement over the assessment period, as shown in the table.

## **SLO Assessment Report**

## Course: BCN4720C – Construction Project Planning and Scheduling

Instructors: Jonghoon Kim

## **Evaluation of Assessment Data:**

#### Indirect Measure

The Indirect Measure for SLO #13 was assessed using the Graduating Senior Exit Survey. A 75.8% ranking was achieved for this SLO in Spring 2025. The target for the indirect measure is 70% (for example, 3.5 in the Likert scale raw score is between moderately and mostly proficient). Indirect measurement assessment met the target during terms, as shown in the table below.

Term	ACCE SLO	Raw Score (1-5)	Number	Percent
F 2023	SLO #13 – Understand construction project control processes	4.18	33	83.6%
S 2024		4.02	45	80.4%
F 2024		3.59	22	71.8%
S 2025		3.79	29	75.8%

#### **Direct Measures**

The Direct Measures for SLO #13 comprise two components. The table below shows the average grade percentages with the Likert scale raw score for the direct assessments.

Term	Number	Criteria	Average Percent (Likert Scale 1-5)	Target Percent
E 2022	21	HW #7 Updating Schedule	82% (4.1)	70%
F 2023	31	Exam II	86% (4.3)	70%
5 2024	25	HW #7 Updating Schedule	79% (3.95)	70%
S 2024 35	S 2024 SS Exam II	Exam II	78% (3.9)	70%
F 2024	42	HW #7 Updating Schedule	82% (4.1)	70%
F 2024 42	42	Exam II	77% (3.85)	70%
S 2025	29	HW #7 Updating Schedule	83.6% (4.18)	70%

Exam II	77% (3.85)	70%
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## Course: BCN4708 – Construction Documents and Contracts

## Instructors: Edward Whelan

## **Evaluation of Assessment Data:**

### Indirect Measure

The Indirect Measure for SLO #14 was assessed using the Graduating Senior Exit Survey. A 71.8% ranking was achieved for this SLO in Spring 2025. The target for the indirect measure is 70% (3.5 on the Likert scale raw score between moderately and mostly proficient). Indirect measurement assessment met the target during the terms as shown in the table below.

Term	ACCE SLO	Raw Score (1-5)	Number	Percent
F 2023	SLO #14 – Understand the legal implications of contract, common, and regulatory law to manage a construction project	3.91	33	78.2%
S 2024		3.76	45	75.2%
F 2024		3.86	22	77.2%
S 2025		3.59	29	71.8%

#### **Direct Measures**

The Direct Measures for SLO #14 consists of midterm and final exams. The table below shows the average grade percentages with the Likert scale raw score for the direct assessments.

Term	Number	Criteria	Average Percent (Likert Scale 1-5)	Target Percent
S 2024	29	Average Scores Midterm and Final Exams	88.9% (4.45)	70%
F 2024	38	Average Scores Midterm and Final Exams	95.2% (4.76)	70%
S 2025	38	Average Scores Midterm and Final Exams	89% (4.45)	70%

## Course: BCN4587C – Green Construction and Sustainability

## Instructors: Jonghoon Kim

## **Evaluation of Assessment Data:**

## Indirect Measure

The Indirect Measure for SLO #3 was assessed using the Graduating Senior Exit Survey. A 76.6% ranking was achieved for this SLO in Spring 2025. The target for the indirect measure is 70% (3.5 in the Likert scale raw score in between moderately and mostly proficient). Indirect measurement assessment met the target during the terms as shown in the table below.

Term	ACCE SLO	Raw Score (1-5)	Number	Percent
F 2023	SLO #15 – Create a construction project safety plan	4.00	33	87.8%
S 2024		3.91	45	78.2%
F 2024		3.45	22	69%
S 2025		3.83	29	76.6%

#### **Direct Measures**

The Direct Measures for SLO #3 consists of two assessment components, including quiz & exam questions, and homework assignment. The table below shows the average grade percentages with the Likert scale raw score for the direct assessments.

Term	Number	Criteria	Average Percent (Likert Scale 1-5)	Target Percent
Su 2023	31	Final Exam	92.4% (4.62)	70%
Su 2024	30	Final Exam	87% (4.35)	70%

**Course:** BCN4431 – Structural Systems

Instructors: Aiyin Jiang

## **Evaluation of Assessment Data:**

## Indirect Measure

The Indirect Measure for SLO #16 was assessed using the Graduating Senior Exit Survey. An 75.8% ranking was achieved for this SLO in Spring 2025. The target for the indirect measure is 70% (3.5 on the Likert scale raw score between moderately and mostly proficient). Indirect measurement assessment met the target during the terms, as shown in the table below.

Term	ACCE SLO	Raw Score (1-5)	Number	Percent
F 2023	SLO #16 – Understand the basic principles of structural behavior	4.06	33	81.2%
S 2024		3.93	45	78.6%
F 2024		4.09	22	81.8%
S 2025		3.79	29	75.8%

#### **Direct Measures**

The Direct Measures for SLO #16 consists of exam questions. The table below shows the average grade percentages with the Likert scale raw score for the direct assessments.

Term	Number	Criteria	Average Percent (Likert Scale 1-5)	Target Percent
F 2023	25	Exam	76.8% (3.84)	70%
S 2024	37	Exam	83.8% (4.19)	70%
F 2024	24	Exam	70.4% (3.52)	70%
S 2025	37	Exam	85.4% (4.27)	70%

## Course: BCN4591C – Mechanical and Electrical Systems

## Instructors: Andrew Barnes & Navid Nickdoost

## **Evaluation of Assessment Data:**

## Indirect Measure

The Indirect Measure for SLO #17 was assessed using the Graduating Senior Exit Survey. An 84.8% ranking was achieved for this SLO in Spring 2025. The target for the indirect measure is 70% (3.5 on the Likert scale raw score between moderately and mostly proficient). Indirect measurement assessment met the target during the terms, as shown in the table below.

Term	ACCE SLO	Raw Score (1-5)	Number	Percent
F 2023	SLO #17 – Understand the basic principles of HVAC, electrical and plumbing systems	4.42	33	88.4%
S 2024		4.22	45	84.4%
F 2024		4.23	22	84.6%
S 2025		4.24	29	84.8%

#### **Direct Measures**

The Direct Measures for SLO #17 consist of multiple quizzes and assignments. The table below shows the average grade percentages with the Likert scale raw score for the direct assessments.

Term	Number	Criteria	Average Percent (Likert Scale 1-5)	Target Percent
F 2023	80	Quizzes	74.2% (3.71)	70%
S 2024	20	Quizzes	83% (4.15)	70%
F 2024	50	Quizzes	70.6% (3.53)	70%
S 2025	41	Quizzes and Assignments	81.4% (4.07)	70%