Analysis of SLO Measure Results and Action Plan

(Completed every three years according to the analysis cycle)

SLO 11: Apply basic surveying techniques for construction layout and control.

Metric: Following courses-course learning outcomes as direct measures.

CMGT 2350 Construction Surveying

CLO 2 (BSD) Demonstrate an understanding of layout, and alignment control by laying out a project.

CMGT 4270 Strategic Analysis and Evaluation

CLO 3(SD) Understand, apply, analyze, or create various types of construction management learning outcomes through an exit examination.

Date: Click or tag	Date: Click or tap to enter a date.									
Course	Analysis and Action									
CMGT 2350 Construction Surveying	Analysis:									
	Action Plan:									
CMGT 4270 Strategic Analysis and Evaluation	Analysis:									
	Action Plan:									

Student Learning Outcomes – Measure 1

(Completed each year by Instructor after review of student work)

For each course, select whether the student learning outcome was met, partially met, unmet, or not reported. Attach documentation supporting the findings, including student's work example, rubrics, questions, or criteria, used in this determination.

SLO 11: Apply basic surveying techniques for construction layout and control.

CMGT 2350 Construction Surveying

CLO 2(BSD) Demonstrate an understanding of layout, and alignment control by laying out a project.

Target: Average score of class to be 80 or higher out of 100 points.

Semester:	Metric:	Instructor:	Date:
Fall 2018	Final exam score	N/A	9/14/2018

Findings

Enrollment	Min. Score	Max. Score	Ave. Score	Met/Part/Unmet/NR
N/A	N/A	N/A	N/A	Unmet
Note: CMGT 2350 v	was not taught in Fall 2	2018 due to faculty sh	ortage. Thus, the asses	ssment was not conducted.

#	Student	Score	#	Student	Score	[#	Student	Score
1			16				31		
2			17				32		
3			18				33		
4			19				34		
5			20				35		
6			21				36		
7			22				37		
8			23				38		
9			24				39		
10			25				40		
11			26				41		
12			27				42		
13			28				43		
14			29				44		
15			30				45		

Collected Student Work: Place the collect student's work after this page for each course, each time taught.

Student Learning Outcomes – Measure 2

(Completed each year by Instructor after review of student work)

For each course, select whether the student learning outcome was met, partially met, unmet, or not reported. Attach documentation supporting the findings, including student's work example, rubrics, questions, or criteria, used in this determination.

SLO 11: Apply basic surveying techniques for construction layout and control.

CMGT 4270 Strategic Analysis and Evaluation

CLO 3(SD) Understand, apply, analyze, or create various types of construction management learning outcomes through an exit examination.

Target: Average score of class to be 70 or higher out of 100 points.

Semester:	Metric:	Instructor:	Date:
Spring 2018	Exit exam score	McCrary	9/14/2018

Findings

Enrollment	Min. Score	Max. Score	Ave. Score	Met/Part/Unmet/NR
12	29%	71%	55%	Unmet
Note: See the attache	ed sample.			

#	Student	Score	#	Student	Score	#	Student	Score
1	Student 1	71%	16			31		
2	Student 2	43	17			32		
3	Student 3	43	18			33		
4	Student 4	71	19			34		
5	Student 5	57	20			35		
6	Student 6	71	21			36		
7	Student 7	71	22			37		
8	Student 8	29	23			38		
9	Student 9	43	24			39		
10	Student 10	57	25			40		
11	Student 11	71	26			41		
12	Student 12	29	27			42		
13			28			43		
14			29			44		
15			30			45		

Collected Student Work: Place the collect student's work after this page for each course, each time taught.

Exit Exam 2018 Results Summary

5L0 11

			C	MGT 235	50		
Q#	50	51	52	53	54	55	56
ANSWERS:	С	а	с	а	d	b	а
Leoany Alvarez	С	а	b	а	d	b	a
Dylan Armstrong	b	а	b	а	d	с	а
Esther Salazar	с	а	c	a	e	e	c
Spencer Wommack	b	a	с	а	d	b	а
Casey Burleigh	b	a	c	а	e	b	а
Ryan Stanley	с	а	с	а	d	е	a
Samantha Thayer	b	а	c	а	d	b	а
Brett Rogers	а	а	а	b	d	с	а
Rhett Williamson	c	а	a	в	e	b	e
Brittan Brown	a	а	с	в	d	b	d
Brittany Stutes	c	а	C	а	d	b	C
Luis Suarez	d	а	с	с	е	с	а
		-					-
x=incorrect table		1	C	MGT 235	50		2.30
Q#	50	51	52	53	54	55	56
pts possible	2	2	2	2	2	2	2
Leoany Alvarez		x	x	1000		-	-
Dylan Armstrong	x	x	x	-		×	
Esther Salazar		×		-	x	×	x
Spencer Wommack	x	×					~
Casey Burleigh	x	×		-	×		
Rvan Stanley		×				×	-
Samantha Thaver	×	×	1000				10000
Brett Rogers	x	x	×	x		x	-
Rhett Williamson		×	×		×	-	×
Brittan Brown	×	×	^		^		×
Brittany Stutes	~	×				10000	×
Luis Suarez	×	×		×	×	×	~
cons such et	-						-
% Correct	42%	0%	67%	83%	67%	58%	67%
in contect	4270	070	0770	0370	0770	5070	0//
			C	MGT 235	0	-	
0#	50	51	52	53	54	55	56
names/nossible	2	2	2	2	2	2	2
nonnes/possible		-	-	-	2	2	2
Leoany Alvarez	2	0	0	2			
Leoany Alvarez	2	0	0	2	2	0	2
Leoany Alvarez Dylan Armstrong Esther Salazar	2 0 2	0	0	2	2	0	2
Leoany Alvarez Dylan Armstrong Esther Salazar Spencer Wommack	2 0 2	0 0 0 0	0 0 2 2	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	2 0 2	0	2
Leoany Alvarez Dylan Armstrong Esther Salazar Spencer Wommack Casey Burleigh	2 0 2 0	0 0 0 0 0 0	0 0 2 2 2 2	2 2 2 2 2	2 0 2 0	0 0 2 2	2 0 2 2 2
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Leoany Alvarez Dylan Armstrong Esther Salazar Spencer Wommack Casey Burleigh Ryan Stanley Samantha Thayer Brett Rogers	2 0 2 0 0 2 0 2 0	0 0 0 0 0 0 0	0 0 2 2 2 2 2 2 2 0	2 2 2 2 2 2 2 2 2 2 0	2 0 2 0 2 2 2 2 2	0 0 2 2 0 2 0 2	2 0 2 2 2 2 2 2 2
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Leoany Alvarez Dylan Armstrong Esther Salazar Spencer Wommack Casey Burleigh Ryan Stanley Samantha Thayer Brett Rogers Rhett Williamson Brittan Brown	2 0 2 0 0 2 0 0 0 2 0 0 0 2 0	0 0 0 0 0 0 0 0 0 0	0 0 2 2 2 2 2 0 0 0 2	2 2 2 2 2 2 2 2 2 0 2 2 0 2 2	2 0 2 0 2 2 2 2 2 0 2	0 0 2 2 0 2 0 2 0 2 2 0 2 2 0 2 0 2 0 2 0 2 0 2 0 2 0 2 0 2 0 2 0 0 2 0 0 0 0 0 0 0 0 0 0 0 0 0	2 0 2 2 2 2 2 2 2 0 0
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	CMGT 235	0				
Total Points Possible for this Course:						
Name	Points	Curve	Total	%		
Leoany Alvarez	10	0	10	71%		
Dylan Armstrong	6	0	6	43%		
Esther Salazar	6	0	6	43%		
Spencer Wommack	10	0	10	71%		
Casey Burleigh	8	0	8	57%		
Ryan Stanley	10	0	10	71%		
Samantha Thayer	10	0	10	71%		
Brett Rogers	4	0	4	29%		
Rhett Williamson	6	0	6	43%		
Brittan Brown	8	0	8	57%		
Brittany Stutes	10	0	10	71%		
Luis Suarez	4	0	4	29%		
	Co	ount of St	udents:	12		
	Minimum	Score Re	eceived:	29%		
	Maximum	Score Re	eceived:	71%		
		Averag	e Score:	55%		

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Da	te		1	1 Z-	12-17				Ĵ		ID	0	0	0	0	0	0	0	0
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Pe	rio	d	_									0	3 0	0	0	9 9	6	6	(B) (B) (C)
Gr	ade	е.	_				_	_	_) () ()) () () ()) () ()) () ()	000	00	0	0
1.	•	₿	0	0	۲	21.	۲		0	0	€				41.	۲	۲	0	0
2.	۲	₿	0	0	€	22.	0	₿	0	0	E				42.	۲	0	0	0
3.	۲	۲	0	0	(6)	23.		₿	0	0	E				43.	۲	₿	0	0
4.	۲	۲	0	0	E	24.	۲	ً₿	۲	0	E				44.		8	0	0
5.	۲	۲	0	0	E	25.		₿	0	0	E				45.	۲	₿	0	0
6.	۲	۲	0	0	E	26.	۲	₿	۲	0	E				46.	۲	₿	0	0
7.	۲	6	0	0	€	27.	۲	8	۲	0	۲				47.	۲	8	0	0
8.		₿	0	0	€	28.	۲	۲	0	0	E				48.	۲	8	0	0
9.	۲	۲	0	0	E	29.	۲	₿	۲	0	E				49.	۲	₿	0	0
10.	۲	۲	0	0	E	30.	۲	8	0	۲	۲				50.	۲	8	0	0
11.	۲	8	0	0	(E)	31.	۲	۲	0	0	۲				51.	۲	₿	0	0
12.		۲	0	0	(E)	32.	۲	₿	0	0	E				52.	۲	8	0	0
13.	0	₿	0	0	€	33.	۲	۲	0	0	E				53.	۲	₿	0	0
14.	()	۲	0	0	(6)	34.	۲	۲	0	0	۲				54.	۲	₿	0	0
15.	()	0	0	0	•	35.	۲	•	0	0					55.	۲	8	0	0
16.	()	(1)	0	0	(E)	36.	()	0	0	0	(E)				56.	(•	0	0
17.	0	(1)	0	0	(E)	37.	()	0	0	0	(1)				57.		•	0	0
18.	()	•	0	0	(E)	38.	()	0	0	0	(E)				58.	()	•	0	0
19.	0	•	0	0		39.	(B	0	0	E				59.	۲	₿	0	0



LAMAR UNIVERSITY Reese Construction Management Program 1900 Program's Exit Exam CLOSED BOOK, CLOSED NOTES.

TIME LIMIT: 3 hours.

Please place your answer on the scan sheet given. Only one answer on this exam form will be graded. Thank you.

COURSE	NO.	QUESTION	ANSWER
2350	50.	In surveying, when measuring an angle in the field, the easiest method for assuring that the angle is correct is: a. measure interior angles b. measure angles to the right c. measure angle direct and reverse d. perform vertical angle closure	с
2350	51.	In surveying, during leveling operations, the elevation of the center axis of the instrument is called the: a. Height of instrument (HI) b. Backsight (BS) c. Turning point	а
2350	52.	A bearing of S 66° 40' 20" E equals an azimuth angle of: Note: See Exhibit 17 for useful equations. a. 156° 40' 20" b. 66° 40' 20" c. 113° 19' 40" d. 293° 19' 40"	с
2350	53.	A source of random residual(s) or random error (not a mistake) in surveying is a. when the horizontal plate is out-of-level beyond the operator's perception. b. when the cross hairs are obviously out of focus. c. when the operator misreads the angle from the theodolite's digital display.	а
2350	54.	The difference between a measurement and its true value, caused by lack of attention or carelessness, is a(n) a. systematic residual (error) b. instrumental residual (error) c. random residual (error) d. mistake e. personal residual (error)	d
2350	55.	Given the information in Exhibit 15, what is the elevation of Station 3+00 to be recorded in the shaded cell? a. 257.0 b. 257.6 c. 257.60 d. 261.35 e. Not enough information to determine	b

LAMAR UNIVERSITY Reese Construction Management Program 1900 Program's Exit Exam CLOSED BOOK, CLOSED NOTES.

TIME LIMIT: 3 hours.

Please place your answer on the scan sheet given. Only one answer on this exam form will be graded. Thank you.

COURSE	NO.	QUESTION	ANSWER
	56.	Given the information in Exhibit 16, what is the direction of line A-X?	a
		Note: See Exhibit 17 for useful equations.	
		a. N 56° 18' 35.8" E	
00		b. S 56° 18' 35.8" W	
23.		c. N 33° 41' 24.2" E	
		d. 33° 41' 00" (azimuth)	
		e. Not enough information to determine	

- 4

Analysis of SLO Measure Results and Action Plan

(Completed every three years according to the analysis cycle)

SLO 12: Understand different methods of project delivery and the roles and responsibilities of all constituencies involved in the design and construction process.

Metric: Following courses-course learning outcomes as direct measures.

CMGT 4325 Construction Project Management

CLO 2(BD) Explain project characteristics and delivery systems.

CMGT 4100 Internship/Independent Study

CLO 3(BI) Examine the construction industry's planning, design, and field operations, including the interrelations among the various tasks and participants in the construction process.

Date: Click or tap to enter a date.

Course	Analysis and Action
course	
CMGT 4325 Construction Project Management	Analysis:
	Action Plan:
CMGT 4100 Internship/ Independent Study	Analysis:
	Action Plan:

Student Learning Outcomes – Measure 1

(Completed each year by Instructor after review of student work)

For each course, select whether the student learning outcome was met, partially met, unmet, or not reported. Attach documentation supporting the findings, including student's work example, rubrics, questions, or criteria, used in this determination.

SLO 12: Understand different methods of project delivery and the roles and responsibilities of all constituencies involved in the design and construction process.

CMGT 4325 Construction Project Management

CLO 2(BD) Explain project characteristics and delivery systems.

Target: Average score of class to be 80 or higher out of 100 points.

Semester:	Metric:	Instructor:	Date:
Spring 2018	Final exam	Hwang	9/12/2018
1 0		U	

Findings

Enrollment	Min. Score	Max. Score	Ave. Score	Met/Part/Unmet/NR
8	65%	85%	74.63%	Unmet
Note: See the attache	ed sample.			

#	Student	Score	#	Student	Score	i	#	Student	Score
1	Student 1	85	16			3	31		
2	Student 2	82	17			3	32		
3	Student 3	75	18			3	33		
4	Student 4	70	19			3	34		
5	Student 5	70	20			3	35		
6	Student 6	75	21			3	36		
7	Student 7	75	22			3	37		
8	Student 8	65	23			3	38		
9			24			3	39		
10			25			4	40		
11			26			4	41		
12			27			4	42		
13			28			4	43		
14			29			4	44		
15			30			4	45		

Collected Student Work: Place the collect student's work after this page for each course, each time taught.

52012.

Final Exam Score Summary

CMGT 4325 (Online Class)

Student	Score
1	85
2	82
3	75
4	70
5	70
6	75
7	75
8	65
Average	74.63
SD	6.523

CMGT 4325/5325 Construction Project Management Final Exam Total Credit 100 points Instructor: Prof. Seokyon Hwang

Spring 2018.

Student Name: Leoany Alvarez 85

Submission:

Put your answers in the boxes and save this file as "FE-First Name-Last Name.doc (docx, pdf). Submit your file via Blackboard.

1. Explain the results of failing to obtain customer satisfaction. (5 points)

The reputation of a company or even a CM can be very critical when it comes to obtaining new clients. If the clients that you are working for notice that you are failing in obtaining the customers satisfaction it could cost you and your company any potential clients. If this situation continues it will cause the business to loss client, therefore money.

2. Explain the features of the Engineering-Procurement-Construction (E-P-C) system. (5 points)

When a CM uses the engineering-procurement-construction system, they are making themselves responsible for the design, procurement and construction of the project.

3. What type of information is found in the Instructions to Bidders? (5 points)

In the instruction to bidders you will find information such as

- bidders representation, defining the obligations of the bidder
- · bidders documents, where and to whom they are available
- interpretation: procedures for question and interpretations of the documents
- · Addenda: which inclusion of addenda as part of the documents and procedures for addenda
- Bidding procedure includes the form and style of acceptance bids, the bid security required, procedures for submission of bids, and rules concerning modification or withdrawal of bid
- Bid openings including procedures for bid opening
- Rejection of bids
- · Award of project to successful bidder
- Requirement for post-information, such as bidder qualification and financial information and product submittals
- Bonding requirements
- · Form of contract to be used for the project.
- 4. Why would a contractor "back-charge" a subcontractor? (5 points)

A contractor would back charge a subcontractor for the amount that needed to do a repair caused by the subcontractor. Let's say that a subcontractor #1 damage subcontractors #2 material that was already installed. The contractor to pay for the subcontractor #2 to come and fix the issue needs to back charge the subcontractor #1 for the same amount to cover that cost.

Answer the question 5 - 6.

The government of a country located in the Central America recently discovered a huge crude oil field. It wants to develop the field and construct a vast pipeline network to transport extracted oil to a refinery facility. It decides to self-finance only half of the entire project budget. In addition, such a large development is the first time for the country. On behalf of the government, how would you, as an employed program manager, manage the project?

Which project delivery method would you recommend to the owner? Discuss why you are in favor of it? (5 points) 0

I would recommend to the owner to go with the traditional design-bid-build delivery method. I would choose this delivery system because is the most prevalent of all the other methods in the private and public projects. If the owner would like to bid to find the lowest most effective bid cost they can with this method. If the owner would like to separate the design and the construction phase from one entity the traditional design-bid-build is the best option. If the owner would like for the construction to be part of the design phase the best method is the design-build. Since in this case the government want to only finance one half of the project they have to choose a contractor that can provide them with the right cost price and that's where the traditional design-bid-build comes in play. The government will have the chance to choose a contractor that can go with their financial abilities.

6. This project also includes rehabilitation of an existing highway that connects the new refinery facility to a near harbor. During the rehabilitation, the highway will be partially closed, causing interruption to road users. For this job, A+B method is selected as a contracting method. Referring to the parameters below, calculate the lowest combined bid (LCB) price. (5 points)

Cost estimate = \$100 Million; Time estimate = 300 days; Estimated daily road-user-cost = \$10,000

100,000 + (300 + 10,000) = 103,000,000

7. Provide your interpretation on the statement "Quality is free" by linking it with rework. (5 points)

"Quality if free" means that the project has to be constant with the specifications and plans in order to provide the owner with quality of project. Is that is not achieved, is free of cost to get it to be in order with the specification and plans. The philosophy reform says, "Do it right, and do it right the first time. Quality is not expensive, is free". The part where is mentions 'do it right the first time' meaning if the project is not correct according with the specification or plans it will not cost the owner to get done right the second time.

8. Do all changes cost money or add time to a project? Explain. (5 points)

No, changes can be made at no cost and with no change in duration. Perhaps clarifying a construction detail or an installation method. Changes will occur in every construction project. These changes can be small, such as clarification to drawings or specifications, or quite large, dramatically affecting the scope of the project. Changes are a normal part of the construction process, as many factors must be considered during its duration. It honestly depend on the impact of the change to the project.

9. The following describe a particular type of document used in a construction project. What is this? (5 points)

"It presents a snapshot of the day's activities and conditions, which is normally created by the superintendent or field engineer."

This description indicates it will be a daily report which includes a snapshot of the day's activities and conditions, internal documents and it will be created by the superintendent or field engineer.

10. Inspection and Test Plan (ITP) is supposed to be prepared by a contractor and reviewed by owner's representatives like architects and engineers. What is the key information included in an ITP? (5 points)

The Inspection and test plan (ITP) defines procedures and standards for the verification of the quality of material and work, either in progress or completed. They key information should include activity, verification and inspection comments.

11. Assuming that you are in charge of procuring materials for a construction project, briefly discuss how RFID technology would benefit you as you manage materials after purchasing order is placed. (5 points) 0

With the use of RFID technology, the accurate depiction of the progress of construction can be made.

12. What does the following describe? (5 points)

A group of employees who perform similar duties and meet at periodic intervals, often with management, to discuss work-related issues and to offer suggestions and ideas for improvements, as in production methods or quality control.

A quality circle.

13. Briefly discuss the concept of 4D technology. (5 points)

The integration of 3D objects with project planning tools, which drives a highly visual simulation of the sequence of construction progress. (4D = 3D + Time)

- 14. What are the three actions followed by as a result of quality control? (5 points)
 - Acceptance decisions either accept or reject work results
 - Rework
 - Process adjustments
- 15. What does the following describe? (5 points)

Mission - To assure safe and healthful working conditions for working men and women. It provides strategic approaches, safety and health standards and guidance, and training and education.

This describes OSHA.

16. Why is it very important to capture context of knowledge to transfer and share knowledge? (5 points)

Because it can be cheaper to capture and retain then to recreate the knowledge. Sharing knowledge could really benefit a company because transferring and sharing knowledge required understanding of background and situation story about the knowledge, having people that can do that it could enrich the knowledge of other workers.

17. What does the following describe? (5 points)

"It is the knowledge collected by a company from its business operations through experience. It is a valuable asset obtained through expensive investments."

This described Corporate Memory.

 Refer to the table below. Apply two types of moving average to predict productivity for Period 26, 27, and 28. Use the shaded cells to present your answers. You don't need to show solutions. (5 points) 0

Period	Productivity	2-Step	MA	4-Ste	p MA
22	8				
23	7				
24	8				1
25	6	1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.		110.00	
26		7.6667	7.5	7.2115	7.21153
27		7	7.5	7.0576	7.36538
28			7		7.05769

19. Conduct productivity rating. You don't need to show solutions. (5 points)

Total obse	rved = 8 men	No. e	of workers in cat	egory	LUE
Obs No.	Time (Min)	Effective	Contributory	Ineffective	LUF
1	12	4	1	1	0.53125
2	26	3	0	1	0.375
3	29	3	1	2	0.40625
4	51	4	1	2	0.53125
5	56	3	2	0	0.4375
alpha = 0.25	5				
Average Ra	ting in percent			45.625	%
Standard De	eviation in perce	nt		7%	
Confidence	Interval (95% co	onfidence)		0.40532	0.46967

20. Calculate the expected monetary values (EMVs) and make a choice of method based on the EMVs. (5 points)

Method	Schedule Performance	Probability	Cost Performance	Expected Value
System	Schedule growth	0.4	-\$40,000	-\$16,000
form	Schedule reduction	0.6	+\$100,000	\$60,000
Conventional	Schedule growth	0.7	-\$20,000	-\$14,000
form	Schedule reduction	0.3	+\$150,000	\$45,000

Student Learning Outcomes – Measure 2

(Completed each year by Instructor after review of student work)

For each course, select whether the student learning outcome was met, partially met, unmet, or not reported. Attach documentation supporting the findings, including student's work example, rubrics, questions, or criteria, used in this determination.

SLO 12: Understand different methods of project delivery and the roles and responsibilities of all constituencies involved in the design and construction process.

CMGT 4100 Internship/Independent Study

CLO 3(BI) Examine the construction industry's planning, design, and field operations, including the interrelations among the various tasks and participants in the construction process.

Target: Average score of class to be 80 or higher out of 100 points.

Semester:	Metric:	Instructor:	Date:
Spring 2018	Internship Report	McCrary	9/12/2018

Findings

Enrollment	Min. Score	Max. Score	Ave. Score	Met/Part/Unmet/NR
13	80	100	90.38	Met
Note: See the attache	ed sample.			

#	Student	Score	#	Student	Score		#	Student	Score
1	Student 1	100	16				31		
2	Student 2	100	17				32		
3	Student 3	80	18				33		
4	Student 4	85	19				34		
5	Student 5	100	20				35		
6	Student 6	85	21				36		
7	Student 7	85	22				37		
8	Student 8	80	23				38		
9	Student 9	85	24				39		
10	Student 10	100	25				40		
11	Student 11	95	26				41		
12	Student 12	95	27				42		
13	Student 13	85	28				43		
14			29				44		
15			30]	45		

Collected Student Work: Place the collect student's work after this page for each course, each time taught.

CMGT 4100 Internship Program

· REPORT · Presentation V RYAN MALONE · Presentation V · Daily Log - Wonderfl Log

EXECUTIVE SUMMARY

This summer brought eye opening experiences to four interns, Ben Hodges, Erik Rodriguez, Juan Hernandez, and myself. We each learned valuable lessons in the field with laborers and foreman. Whether it was tying rebar, pouring slabs, or calculating yield for hot mix asphalt we all had a role to play in the field. After spending two months in the field we hung up our work boots and entered the office to learn estimating and project management. We were given simple projects to estimate individually. When we completed the projects we compared our quantities and our bid amount to see which member was off, and where they were off. This helped us gain knowledge with estimating and helped us prepare for our estimating course in the fall. Three weeks before our internship was complete we were paired into two teams to present a mini-capstone project to our managers and company president. Juan and I were paired together and spent every minute of every day working on the project to make sure it was feasible and accurate. We spent a lot of time this summer working very hard and it has taught me many valuable lessons.

i

TABLE OF CONTENTS

e Summary	
Contents	
roduction	
Background and Motivation	
Goals and Objectives	
e Internship	
Field Work	
Office Work	
ling the Internship	
Final Project	
Lessons Learned	

1. INTRODUCTION

1.1. Background and Motivation

I have worked in the construction industry for almost five years now. Since my second year of college I have worked for Gulf Coast (formerly known as APAC). I spent my first two years within the company as a QC/QA technician in the laboratory. Since my internship I have been promoted to assistant project manager.

Each year that I've spent in the construction industry has brought me new beginnings and more knowledge. My work experience has helped me comprehend classroom objectives and has helped me become more of a well-rounded employee. My motivation started when I made my first 4.0 GPA as a student in the CMGT program. Since then, I felt like I had to push myself to be the best each semester. Whether studying all night or working 60 hours a week, I knew I had to succeed in not only my studies, but work as well.

1.2. Goals and Objectives

My objective for this internship was to be promoted at the end. I wanted to prove myself not only to the workers in the field, but to my managers as well. I can now say that I have successfully obtained my goal. I also wanted to gain more hands-on experience this summer. While working on numerous projects across the Southeast Texas region I was able to fulfill my goal of gaining hands-on experience.

2

2. THE INTERNSHIP

2.1. Field Work

Over the course of the summer my partner (Juan Hernandez) and I, worked on six different construction sites. Whether it be scope of work, duration, or crew size, each project was different in its own way.

We first started on Highway 12 in Orange County. The crew was milling the existing shoulder in preparation for roadway widening. We learned how to track quantities and production rates for the work being accomplished. We also learned how to set the grade on the milling machine so there wouldn't be any need for cut/fill operations once the milling was complete.

We then went to Jack Brooks Airport in Nederland, Texas. The team was reconstructing a taxiway between two hangers. We learned how to cut and tie rebar, set forms, check grade, and finish concrete. Most of the crew was Hispanic and didn't speak fluent English so I struggled to comprehend what they were saying for the majority of our time there. Juan helped translate for me throughout our time working with this crew.

After finishing our week at Jack Brooks we went to FM 92 in Tyler County. This was an interesting project because students from the Texas A&M Department of Transportation Institute designed an alternative to roadway stabilization and this project was chosen to test it out. The students designed the stabilization to occur between a chemical reaction of 3% bitumen and 2% cement. These materials were mixed 8" into the existing surface and then graded and compacted. Over a 48

3

hour period the mixture cured and reached optimum stiffness. We not only got to learn the science behind road stabilization, but we got to operate the pneumatic rollers as well.

After spending a week on FM 92 we traveled to Nederland Ave. in Nederland, Texas to help perform full-depth roadway reclamation. The crew had a third party company come saw-cut joints in the existing concrete before we arrived. We spent most of our time running equipment on this project. The crew excavated 16-20" below the existing concrete surface and then backfilled the excavated area with ASB (asphalt stabilized base). I was in charge of compacting the ASB with a double steel-wheel roller. This helped me understand the importance of traffic control because I had to constantly back out of the excavated area and reposition the roller. Every time I would back out of the excavated area the flaggers would have to stop traffic on both sides of me.

We then were placed on Sunset Ave. in Orange, Texas. The crew was mixing a fly ash / lime mixture 6" deep for roadway stabilization. Our second day on the job the mixer ruptured an active gas line that was not marked underneath the roadway. The job was shut down until further notice and we were transferred to the Lumberton Park on FM 421.

While at the park we cut and tied rebar, set forms, and shot grade. We worked with the same crew that was at Jack Brooks airport. We also helped with preparing the right-of-way. We installed silt fence and erosion logs before any construction related activities took place.

4

C - 377

2.2. Office Work

Our last few weeks of our internship we spent in the office learning about the financial side of projects along with how projects begin. Our mentors taught us how to tabulate bid quantities, perform quantity take-offs, and how to bring everything together and place the information into HCSS Heavy-Bid. We were given several different jobs to perform quantity take-offs on. We worked on these projects individually and compared quantities, labor, and time at the end. By us working in the field all summer this helped prepare us to perform quantity take-offs. We also got to work closely by our operations team. We learned how to read flash reports, track costs, and determine if we were making money or losing money.

3. ENDING THE INTERNSHIP

3.1. Final Project

Three weeks before our internship was scheduled to end we were presented with a set of plans. Juan and I had a project that entailed full-depth reclamation with a 2" HMA (hot mix asphalt) overlay. We wanted to make sure everything was precisely calculated since we were having to present this project to not only our upper management, but our president as well. Each of us performed quantity takeoffs and collaborated on how we would execute the project. Once we had a general idea of what we needed to do, I gathered the size of the crew we would need along with equipment and materials to get the job done. Juan prepared our schedule and set our job up in HCSS Heavy-Bid. Once the job was entered into HCSS we printed out our cost reports and went over each bid item very carefully to look for mistakes

5

and to double check our costs. We then prepared a PowerPoint presentation that lasted 15 minutes. We had to include how we tabulated quantities, materials, crew size, equipment, and cost for the project. We also had to include pictures and a brief description of what we learned throughout this summer. We spent three days reviewing our slides and preparing for our final presentation. This not only helped us by preparing for our future jobs, but it also helped us prepare for our capstone project next semester. After we presented the project there were many questions. We were able to answer every question thrown at us. This made me feel really good about myself and my accomplishments over the summer.

3.2. Lessons Learned

Construction is not easy and workers aren't appreciated as much as they should be. This summer was an eye-opening experience to say the least. Our group of interns worked very hard this summer. I learned how to bid a project and how to execute a project. I also learned that time is money and that it takes a very long time to bid a set of plans. Gulf Coast provided us with great mentors to help us when we needed answers and to guide us through this summer. I can speak for everyone when I say that we learned a great deal of valuable knowledge this summer.

6

C - 379

APPENDIX



Ryan Malone

Summer 2018 Internship Gulf Coast - CRH

59 Daily Reports 583.75 Hours Worked



Previous Page Next Page



Monday, May 21, 2018 Ryan Malone Gulf Coast Main Office - Human Resources Dept. Time: 8:00 - 17:00 (9hrs) Day: 1

Today I attended employee orientation. This is a hiring process / meeting that is required through CRH that the Human Resources department holds for new employees. This meeting covered safety policies, CHR company policies, and a review of the employee handbook. There was a very informative program that was covered during the orientation called COBC. COBC stands for Code of Business Conduct and is mandatory for all CRH employees to view. COBC explains to the employee the ethical and moral values of CRH as a worldwide company and what steps to take if you are exposed to a non-ethical work environment. I thought that this was a very beneficial program that CRH has implemented throughout all of its worldwide companies.



Tuesday, May 22, 2018 Ryan Malone Gulf Coast Main Office - Estimating Dept. Time: 7:00 - 17:00 (10hrs) Day: 2

Today I began my first estimating project. The estimating manager (Scott Blanchard) wanted the interns to estimate the amount of concrete, materials, crew, and working hours it would take to complete a small job that was recently completed in Mount Belvieu. After the estimate was completed the interns attended a bid meeting on Pleasure Island for a City of Port Arthur job. After the bid meeting there was a jobsite tour that covered the main bid item and the addenda. I had several questions for the engineer concerning turn radius for on-land and barge cranes since the awarded contractor would be placing 25' sheet piling within 10' of an occupied home. I also brought to the engineer's attention that driving piling within that close of a distance to a home could possibly cause damage to the structural soundness of the home. The engineer told me to tell my professors that they were doing a very good job at teaching me concepts and things to look for when observing a jobsite.



Wednesday, May 23, 2018 Ryan Malone Gulf Coast Main Office - Estimating Dept. Time: 7:00 - 17:00 (10hrs) Day: 3

This morning I attended the weekly estimating meeting. This is where the estimating department hosts a meeting with the project managers and the operations manager. The meeting covers project scope, overview of plans, bid items, projected profit margin, and the projected start date of the project. It was very informational to see the project handoff take place between the estimating department and the project managers. After the meeting we learned how the Gulf Coast estimating department uses HCSS Heavy Bid to enter job information and set up the bid. This afternoon the interns were given a cut/fill project for a railroad installation project in Jasper. This was informational because I used the information I learned in surveying to determine the cut/fill area for each section of proposed railway.



Thursday, May 24, 2018 Ryan Malone Gulf Coast Main Office - Estimating Dept. Time: 7:00 - 17:00 (10hrs) Day: 4

Today I finished the cut/fill estimates I had prepared based off of the plans that were provided yesterday. The interns sat down with one of the members of the Gulf Coast estimating team (Jose Loza) and compared our estimates. We found that there were variations in the estimates between the interns. Jose explained the different ways to calculate cut/fill based off of the drawings that were provided from the engineer. This afternoon I helped Jose with the City of Port Arthur sheet pile job. We discussed different factors, execution plan, pricing, and equipment that may or may not be necessary to complete the job. After we figured the crew personnel, equipment, and the execution plan we started estimating the bid items.



Friday, May 25, 2018 Ryan Malone Gulf Coast Main Office - Estimating Dept. Time: 7:00 - 17:00 (10hrs) Day: 5

This morning I was given a set of plans / drawings for a City of Nederland job that was requiring asphalt rehabilitation. I calculated the amount of HMA overlay that was required along with base repairs and milling required on the plans. This afternoon I attended a monthly safety committee meeting. Each crew has 1-2 members that are a part of the committee. The meeting discussed what has happened over the past month including near miss cards, recordable injuries, preventive action plans, and recommendations going forward. I think that this committee is very beneficial to the company and beneficial to keeping Gulf Coast a safe company overall.



Tuesday, May 29, 2018 Ryan Malone State Highway 12 Orange Co. - Road Milling Time: 7:00 - 17:00 (10hrs) Day: 6

Today I worked on SH-12 in Orange County. The crew is performing a 15' milling operation to prepare for new sub-base installation along with plans for road widening. This project is project to last 13 months total with 4 phases and 4 sub-phases per phase. I looked over the plans this morning with the TxDOT inspector (LaShawn Mitchell) and the project foreman (Lorenzo Colston) and got an understanding of what the project was about along with the different phases throughout the project. I thought it was very neat to see how the project was separated into 4 phases and the current phase was 1d. I learned about roadway milling and how to set the mill machine along with the proposed slope of the cut area after the mill is complete.



Wednesday, May 30, 2018 Ryan Malone State Highway 12 Orange Co. - Road Milling Time: 7:00 - 17:00 (10hrs) Day: 7

Today I worked on SH-12 in Orange County. The crew is performing a 15' milling operation to prepare for new sub-base installation along with plans for road widening. The crew milled a 7' wide section from station 235+00 to 163+80 at a 6" depth. The section that was milled today was existing shell base that was previously the base for the improved shoulder. Seeing shell base was pretty neat. The foreman (Lorenzo Colston) said you couldn't purchase shell base anymore. I also noticed that when you mill shell base and add water to the mix to keep the dust down that it starts to smell like ocean water. Shell base has a distinct smell that was hardly unnoticeable.



Thursday, May 31, 2018 Ryan Malone State Highway 12 Orange Co. - Road Milling Time: 7:00 - 15:00 (8hrs) Day: 8

Today the crew fine graded the milled area. At the east end of the project I painted a line marking 16' for one dozer operator to widen the milled area by 1' so they could roll the sloped windrow that is attached to the existing highway to the other side of the milled area when the next crew places the cement/slurry mix. At the west end of the project I set hubs every 25' for the entire 3 mile milled section. I placed the hubs 15' off of the existing shoulder and then took a straight line and set the hubs at a 12" height using a 2% slope. This was for the dozer operator on the west end to obtain a rough grade for cut/fill. The survey crew will be onsite Monday to shoot actual grade for the crew.



Friday, June 1, 2018 Ryan Malone State Highway 12 Orange Co. - Road Milling Time: 7:00 - 15:00 (8hrs) Day: 9

Today the crew fine graded the milled area. At the east end of the project I painted a line marking 16' for one dozer operator to widen the milled area by 1' so they could roll the sloped windrow that is attached to the existing highway to the other side of the milled area when the next crew places the cement/slurry mix. At the west end of the project I set hubs every 25' for the entire 3 mile milled section. I placed the hubs 15' off of the existing shoulder and then took a straight line and set the hubs at a 12" height using a 2% slope. This was for the dozer operator on the west end to obtain a rough grade for cut/fill. The survey crew will be onsite Monday to shoot actual grade for the crew.



Monday, June 4, 2018 Ryan Malone City of Lumberton Park (421) - Widening / Expansion Time: 7:00 - 17:00 (10hrs) Day: 10

Today I went out with one of the Gulf Coast project managers (Trevor Holmes). We were installing silt fence at the City of Lumberton Park. This was very informational to me since I had never installed silt fencing before. We looked at the project plans and located the sections on the plans where the silt fence was needed. We then took a ditch witch and cut a groove into the ground 6" deep for the fencing to be placed in. We installed around 100' of silt fence today. After we installed the silt fence we placed sediment logs around the premises at the specified locations.



Tuesday, June 5, 2018 Ryan Malone Jack Brooks Airport - Slip Form Paving (PCC) Time: 7:00 - 18:00 (11hrs) Day: 11

Today I was stationed at the Jack Brooks airport for a slip form paving job. The crew is paving a taxi way across the airport. I helped tie rebar and set baskets throughout the few sections that were being poured today. The crew poured 3 small sections (around 50 CY) today. I learned that you have to use a special concrete mixture per FAA regulations and that you do not have to place a bond breaker on the flex-base if the base is not cement treated. It took most of the day to set up formwork for the pour. The concrete was onsite at 14:30 and it took until 17:30 to pour and finish the concrete.


Wednesday, June 6, 2018 Ryan Malone Jack Brooks Airport - Slip Form Paving (PCC) Time: 6:00 - 16:30 (10.5hrs) Day: 12

Today I formed radial turn-outs for each end of the project. I was introduced on how to set up forms and how to check angles to see if they were in the correct location. I then laid #6 rebar at the ends of the turn-outs for a joint cap. The existing pavement is perpendicular to the new pavements so it will shift in different directions when expansion/contraction occurs. I then placed dowel rods 10" into the new existing PCC and applied epoxy so they would be properly secured. We had to make forms using 1"x6" boards at the NW end of the project. The proposed radius is larger than the SE end therefore we cannot use prefab forms.



Thursday, June 7, 2018 Ryan Malone Jack Brooks Airport - Slip Form Paving (PCC) Time: 6:00 - 16:30 (10.5hrs) Day: 13

Today I completed the radius formation for concrete pour happening on Monday. We placed rebar mats 12'x 12' on top of the baskets. We had to cut 3 mats to form the radius and then reform the rebar to make a precise fit within the formwork. After we placed the rebar we installed 7" chairs under the rebar along with drilling rebar into the ground to add stability to the mat. The rebar was laid on the edges of the baskets because there is a sawed joint every 12'6". This allows for expansion/contraction along for easy removal if the mat becomes cracked.



Friday, June 8, 2018 Ryan Malone Jack Brooks Airport - Slip Form Paving (PCC) Time: 6:00 - 17:00 (11hrs) Day: 14

Today we started setting up baskets and rebar mats for the slip form paving that will be taking place on Tuesday. The surveyors came out this morning and shot grade on the old existing PCC and the new existing PCC along. This allows the foreman to match the grade on both sides of the mat while achieving the 2% slope from the crown (centerline). I also installed 1"x13"x10' corkboard against the old existing PCC for expansion/contraction purposes. The old existing PCC runs perpendicular to the new existing PCC this is why the cork board is placed. If not, the new and old PCC would be under tension and this would cause fractures in the pavement.



Tuesday, June 12, 2018 Ryan Malone Industrial Project Management - ISTC Basic Training Time: 7:00 - 17:00 (10hrs) Day: 16

Today I attended the ISTC Basic Training at the ISTC training facility in Nederland. The class covered basic training for plants and other hazardous/dangerous work environments. The instructor covered 15 topics that were relevant to safety, fire, chemicals, OSHA, and fall protection. Once the class was complete there was a 50 question exam over the course. I took this class today so I could complete a field study with our Industrial crew at the Port of Beaumont. After the exam I returned to the office to complete miscellaneous tasks for the rest of the afternoon.



Wednesday, June 13, 2018 Ryan Malone Industrial Project Management - Estimating Time: 7:00 - 17:00 (10hrs) Day: 17

Today I started filing our estimate folders along with our job folders. I had to look up bid numbers and correlate those to the assigned job number along with filling out the job information in excel. Once I completed filling out the excel document I printed out the job proposals and placed them in the file. I then filed the estimate folders in numerical order. I was then given the task to file old change orders. I took the change orders and looked up the job information and found what job folder to place them in. If they did not have a folder I created one then placed them in numerical order with the current folders.



Thursday, June 14, 2018 Ryan Malone Industrial Project Management - Estimating Time: 7:00 - 17:00 (10hrs) Day: 18

Today I was instructed to create a job-setup folder for one of our upcoming jobs. This is where you take the job information, contract information, bond information, and the invoice information and combine them into separate excel docs. Once the documents have been created you combine everything into a pdf form and send it to the accounting department. This afternoon I started creating bid items and creating a bid file in HCSS Heavy-Bid for one of our bid proposals. I had to calculate quantities, work days, operation execution plan, and rates. This was a very detailed process that will help me in my future career.



Friday, June 15, 2018 Ryan Malone Industrial Project Management - Estimating Time: 7:00 - 15:00 (8hrs) Day: 19

Today I was given the task to add prices to our estimate log sheet. This is where you go into each job folder and pull the proposed estimate and log it into the estimate log sheet next to the bid number. This was an all-day task considering there were 328 estimates in the log sheet. Before lunch I set up a proposal for one of the upcoming jobs we are bidding on. I then setup two field books which include drawings, cost before markup, important emails, and other critical job information. These folders are given to the foreman and the project superintendent.



Monday, June 18, 2018 Ryan Malone Gulf Coast Main Office - Estimating Time: 7:00 - 16:00 (9hrs) Day: 20

Today I was given a set of TxDOT plans for FM 1410. This is a highway widening job for proposed travel lane shoulders. TxDOT supplies quantities that their department has calculated for the given plans. It is our job to review the plans and the given quantities, and to re-estimate the project to make sure all of the given quantities are accurate and precise. After I checked the quantities the estimating team sat down and discussed how to enter the project into HCSS Heavy-Bid. We then discussed the possible duration of the project along with equipment needed to complete the job.



Tuesday, June 19, 2018 Ryan Malone Gulf Coast Main Office - Estimating Time: 6:00 - 14:00 (8hrs) Day: 21

Rain out

Completed miscellaneous tasks around main office.



Wednesday, June 20, 2018 Ryan Malone Gulf Coast Main Office - Estimating Time: 7:00 - 17:00 (10hrs) Day: 22

Today I was given a set of plans along with a material bid item sheet. This project is a reconstruction of a storm drain in Vidor using box culverts. I went through the plans and estimated material quantities, equipment, man power, and duration of the project. This is a GLO (General Land Office) project so the specifications are different than standard TxDOT specifications. After I calculated everything on the material bid item sheet the estimating department reviewed the completed project with the interns in HCSS Heavy-Bid. This is to help us learn and understand quantities, equipment, man power, and duration of the project. We got to compare our material bid item sheets with each other and with the actual estimate to see if we were close or if we were off.



Thursday, June 21, 2018 Ryan Malone Gulf Coast Main Office - Estimating Time: 7:00 - 17:00 (10hrs) Day: 23

Today I went to a pre-bid meeting for a City of Beaumont job. This was an unusual job since it was a set 2 year contract. The contract stated an estimate of 180SY of cement slurry for miscellaneous city streets. I learned during the meeting that the bonds would have to be placed under a separate line item for reimbursement or the contractor would be \$40,000+ in debt until the two year contract is complete. The city engineers said that they would talk to the legal department and add a line item in the addendum so the contractor would be compensated for the insurance bonds.



Friday, June 22, 2018 Ryan Malone Gulf Coast Main Office - Estimating Time: 7:00 - 17:00 (10hrs) Day: 24

Today I helped our estimating manager make a video for a lawsuit that we are currently in. What I did was take a GoPro and mount it to the front of a truck and drive 15 mph down the road. We drove only the roads that are within the lawsuit. When we got back to the office it took me the rest of the day to edit the video and to get it just how he wanted it to be. I did learn that there are different ways to approach a lawsuit and how to handle it internally. It's very beneficial to know that you have select people in every department (besides managers) that can help with important business like this. This can bring new ideas on how to approach the lawsuit and preparing it.



Monday, June 25, 2018 Ryan Malone FM 92 TYLER CO - Highway Rehabilitation Time: 6:00 - 17:00 (11hrs) Day: 25

The crew members on FM 92 are doing an experimental project for TxDOT. TxDOT and the A&M Transportation Institution have designed a process where cement powder is mixed into a milled section of road. After the cement powder is laid, a reclaimer machine mills 8" and shoots oil into the milled section to activate the cement powder. Per the A&M study, this should improve the sustainability of roads if this job it performed and tested correctly. A&M students have been taking and testing each different section (1200'). TxDOT has been changing the percentages which are placed in these sections to see which one will be the most compacted, cost efficient, and most sustainable. Today they were laying 2% cement and 3% oil, which turned out to look like oil sand in my opinion.



Tuesday, June 26, 2018 Ryan Malone FM 92 TYLER CO - Highway Rehabilitation Time: 6:00 - 17:00 (11hrs) Day: 26

Today the FM 92 crew continued the FDR (Full Depth Repair) process. TxDOT and A&M wanted to leave the mix percentages the same as Monday, 2% cement and 3% oil. Once the section of road was milled this morning the cement truck placed the cement and then a maintainer leveled the surface for the reclaimer. The oil truck carries 5,500 gallons of oil and is considered a transport unit. The oil truck arrived while the cement was being placed. When the driver was attaching to the reclaimer the transport truck ran out of diesel fuel. This was an hour delay in our project because the foreman had to call a mechanic to work on the engine and prime the fuel lines. Once the transport truck was fixed the crew was able to catch up and still meet our production requirements for the day.



Wednesday, June 27, 2018 Ryan Malone Gulf Coast Jasper - Highway Estimating Time: 6:00 - 17:00 (11hrs) Day: 27

Today I was with the estimating manager at the Jasper branch. He had me set up job folders for an upcoming job that we were awarded. The job folders include plans, contact information, schedule, job details, daily budget, and vendor contact information. I then filled out a TxDOT SiteManager materials sourcing letter which includes all parties that will be working on the job, materials / material supplier, and contractor information. We are required to fill these out for pre-con (preconstruction) meetings that we attend with TxDOT. The pre-con for this job will be tomorrow at 15:00 at the TxDOT area office in Jasper, Texas.



Thursday, June 28, 2018 Ryan Malone Gulf Coast Jasper - Highway Estimating Time: 6:00 - 17:00 (11hrs) Day: 28

Today I helped the Jasper estimator prepare a bid package that was due at 10:00. This is a long and difficult process to say the least. We want to make sure that all of our numbers are correct and that we have included our vendor pricing along with making sure that our vendor pricing hasn't overlapped and added to our cost to perform the item that's being subbed out. TxDOT awards the lowest bid every time, that's why it always pays to see which items you can make large profit on in the bid and items you can make small profit on. This afternoon we attended the pre-con meeting at the TxDOT area office in Jasper. We discussed items in the scope of work that could potentially become change orders and cause problems later on in the project.



Friday, June 29, 2018 Ryan Malone Gulf Coast Main Office - I.T. / Estimating Time: 6:00 - 17:00 (11hrs) Day: 29

Today I reached out for assistance in completing the videos that were taken for a lawsuit we are currently in. Our I.T. manager helped me put all of the short videos into a movie format and helped me label the street names / numbers on each section of the film. This is a project requested to me by our company president, therefore it had to be perfect. Later this afternoon I received feedback from the estimating manager and he said that our president viewed the film and said it was very good.



Monday, July 2, 2018 Ryan Malone Gulf Coast Jasper - Laboratory Time: 6:00 - 17:00 (11hrs) Day: 30

Today I took Juan Hernandez (intern) to our Jasper laboratory to run unit weights on designated stockpiles. We ran a total of 14 unit weights which took roughly 4 hours to complete. Our accounting department gets a mapped image of the stockyard from a third-party drone company. They are able to tell the quantity of the stockpiles and material in the yard based off of the air survey along with the unit weights for the materials. This was an informational experience for Juan since he had never ran unit weights before. I was able to teach him the proper way to complete the task and enter the data into the unit weight excel document to send to accounting.



Tuesday, July 3, 2018 Ryan Malone Gulf Coast - Orange Co. 28th & Sunset Time: 6:00 - 17:00 (11hrs) Day: 31

This morning I went with one of the project managers to 7th street in Port Arthur. The crew was experiencing sub-grade failures and I went to complete a report on the failing areas. This afternoon I went to 28th street in Orange Co. to complete a field study on road rehabilitation and stabilization. The crew is reclaiming 8" of roadway (left in place) then rolling the millings with a sheepsfoot roller. Next week they are expected to lay dry lime and fly ash over the milled area and remix the material. After the stabilization is complete the crew will overlay the road with HMA (hot mix asphalt).



Wednesday, July 4, 2018 Ryan Malone Gulf Coast Time: Day: 32

PAID HOLIDAY



Thursday, July 5, 2018 Ryan Malone Gulf Coast - Orange Co. 28th & Sunset Time: 6:00 - 17:00 (11hrs) Day: 33

This morning the crew completed the daily T-5 (JSA) then mobilized the equipment to the jobsite. After 30 min of milling operations the reclaimer ruptured a 2" gas pipeline under the roadway. There was a miscommunication between our company and the city on where the lines were located to begin with. The fire department arrived quickly after the gas line was ruptured along with Center Point Energy and the city inspector. The job was shut down until next week due to the pipeline company having to replace the ruptured pipe. We also have to have 811 come to the jobsite and locate the rest of the underground pipelines in the work area.



Friday, July 6, 2018 Ryan Malone Gulf Coast - Estimating Department Time: 6:00 - 16:00 (10hrs) Day: 34

Today I worked on a set of plans for IH-10 in Jefferson Co. I was instructed to locate the underground pipe detail sheet out of 1200 pages of plans. Once I found the detail sheet I had to calculate the length of the pipe along with the quantity of the pipe for the subcontractor work we will be bidding on. The pipe varied from 80' to 150' in length. The plans show to be 8" PVC (sch. 80) for drainage under temporary detour lanes which will be placed along IH-10 in the upcoming interstate reconstruction project. I learned that details in the plans can sometimes lack information and it's always best to call the engineer to receive a correct understanding.



Monday, July 9, 2018 Ryan Malone Gulf Coast - Estimating Department Time: 6:00 - 16:00 (10hrs) Day: 35

Today I helped the estimating department by calculating quantities on bid items for upcoming jobs. This is helpful not only to me but for the estimating team as well. I was able to hand calculate the quantities and compare them to the engineer estimate to compare. Once I was finished calculating the quantities for the bid items we were able to enter them into HCSS Heavy-Bid. Once we entered the job into HCSS we were able to start the bid process using the hand calculated quantities. Since the project was small it didn't take very long to set up in HCSS.



Tuesday, July 10, 2018 Ryan Malone Gulf Coast - Nederland Ave. Time: 6:00 - 18:00 (12hrs) Day: 36

Today I worked with one of our crews on Nederland Ave. in Nederland, Texas. The crew is performing full-depth base repairs this week. We excavated the existing concrete pavement then excavated 20" into the base. Once we reached 20" down we then filled in the cavity with ASB (asphalt stabilized base). We repaired 105.23 SY for the day along with placing 120.54 tons of ASB calculated at 5% waste. The ASB was placed and compacted in three lifts. The lifts were 8", 8", and 4". Once the ASB was placed the work area was cleaned and the lane closures were taken down and opened to traffic.



Wednesday, July 11, 2018 Ryan Malone Gulf Coast - Nederland Ave. Time: 6:00 - 18:00 (12hrs) Day: 37

Today I worked with one of our crews on Nederland Ave. in Nederland, Texas. The crew is performing full-depth base repairs this week. We excavated the existing concrete pavement then excavated 20" into the base. Once we reached 20" down we then filled in the cavity with ASB (asphalt stabilized base). We repaired two areas totaling 103.78 SY of excavated material and placing 120.68 tons of ASB. The engineers were onsite today reviewing plans for drainage and slope. I helped the engineers take elevation measurements along the south side of the project. They were then able to determine the height of the asphalt to be placed so the water drains to the designated drainage areas.





Thursday, July 12, 2018 Ryan Malone Gulf Coast - Nederland Ave. Time: 6:00 - 18:00 (12hrs) Day: 38

Today I worked with one of our crews on Nederland Ave. in Nederland, Texas. The crew is performing full-depth base repairs this week. We excavated the existing concrete pavement then excavated 20" into the base. Once we reached 20" down we then filled in the cavity with ASB (asphalt stabilized base). We repaired 4 areas totaling 99.11 SY of excavated material and 119.14 tons of ASB placed in the cavities. The foreman (John Stokes) let us operate equipment today. He trained us to use the backhoe to excavate the concrete. He then showed us how to operate the double steel wheel roller to compact the ASB in layers.



Friday, July 13, 2018 Ryan Malone Gulf Coast - Estimating Department Time: 6:00 - 16:00 (10hrs) Day: 39

Today I worked with the estimating department preparing job folders for the foreman. This is where the job information is placed in a folder along with important contact information for subcontractors and vendors. The folders also include plans along with a desired schedule and scope of work. Once the folders are made they are handed off to the project manager to pass along to the foreman. The foreman then review the folders and prepare their crew for the upcoming job.





Monday, July 16, 2018 Ryan Malone Gulf Coast - 28th & Sunset Orange Co. Time: 6:00 - 16:00 (10hrs) Day: 40

Today I worked with the crew I was with two weeks ago. The gas line was repaired and ready for us to continue work. We ordered two trucks for today's production. The trucks contain a mixture of lime and fly ash and are transported from Waco, Texas. The crew was mixing the lime/fly ash into the reclaimed 8" of previous roadway. Once the mixing was complete the road was bladed and then rolled for compaction. You have to keep a near constant supply of water on the roadway to keep the dust down. The lime/fly ash is in a powder form when delivered and is very dusty.





Tuesday, July 17, 2018 Ryan Malone Gulf Coast - Industrial Estimating Time: 6:00 - 17:00 (11hrs) Day: 41

Today I worked with the industrial estimating team. I went through a system we use called Salesforce and entered in bid quantities along with materials used for the projects. I also entered in if the bid was won, lost, or abandoned. This is so the company can keep record of our bids along with comparing our bids with our competitor's bids. Our accounting department can review this data to help our estimators be more efficient in the future with bidding projects with our usual competitors. I also attended a town hall broadcast meeting today. The president of Americas Materials presented how the company was doing so far this year and what our second half outlook is.



Wednesday, July 18, 2018 Ryan Malone Gulf Coast - Industrial Estimating Time: 7:00 - 17:00 (10hrs) Day: 42

Today I finished helping the industrial team with the organization of their spreadsheets. I completed the same tasks that I did yesterday. This afternoon I went to a bid meeting at city hall in Port Arthur. The bid meeting covered a bulkhead installation job on Pleasure Island that we looked at in June. Our project management team along with our estimating team was hoping to not be awarded the job based off of the scope of work. We came in third place out of three contractors for the job. Once I returned to the office I completed my daily paperwork and reports.



Thursday, July 19, 2018 Ryan Malone Gulf Coast - Lumberton City Park (FM 421) Time: 6:00 - 17:00 (11hrs) Day: 43

Today I worked with one of three crews on this project. This is road / path widening job for the city of Lumberton. We spent the day excavating 18" out from the existing PCC and 12" down from the existing surface of the PCC along with excavating 6" underneath the existing PCC. The reason the crews are doing this is so that a shelf is made and the new PCC will conjoin under the existing PCC. This is a stringent and slow process. There was a mini-x excavator, 3 shovels, and 2 pickaxes to complete this task in multiple areas around the park. The crew has three days to complete the excavation / formation of the shelf.



Friday, July 20, 2018 Ryan Malone Gulf Coast - Estimating Department Time: 7:00 - 17:00 (10hrs) Day: 44

Today I caught up on paperwork and reports from each jobsite I have worked on. Gulf Coast - CRH has prepared a field study report questionnaire for each intern to fill out at the end of a project. This report tracks production, crew members, equipment, and scope of work for each day. This is to help us better understand the process along with helping the company see if the bid amount of people and equipment for each job is efficient. This afternoon we had a meeting with our company president along with our operations manager. We covered the jobs that we've been on and explained to them what the foreman had us doing each day.





Monday, July 23, 2018 Ryan Malone Gulf Coast - FM-92 HMA 2" Overlay Time: 7:00 - 17:00 (10hrs) Day: 45

Today I worked with our Jasper crew while they were performing a 2" overlay on FM-92 in Tyler Co. The crew was paving LOT 4 and using Type C sac B PG 76-22 bituminous mixture. The crew was paving the Northbound Shoulder starting at station 136+30 to 63+66. The paving crew placed 1391.64 tons of asphalt today. Once the crew has the paver set at the correct height and width then the labor is minimum. Periodically a large piece of HMA that comes off of the flights in the plant shows up in the mix on the highway. This causes the crew to perform handwork to make sure the mat is even across.



Tuesday, July 24, 2018 Ryan Malone Gulf Coast - FM-92 HMA 2" Overlay Time: 7:00 - 17:00 (10hrs) Day: 46

Today I worked with our Jasper crew while they were performing a 2" overlay on FM-92 in Tyler Co. The crew was paving LOT 5 and using Type C sac B PG 76-22 bituminous mixture. The crew was paving the Northbound Middle lane then the Southbound Shoulder. The Northbound Middle lane consisted of stations 35+55 to 00+24 and the Southbound Shoulder consisted of stations 00+24 to 20+40. We received a call at 13:00hrs stating that the Jasper Hot Mix plant had broken down. The total tonnage for today's production was 787.79. Although this shut the placement down early the foreman was still able to send his crew to the south end of the project to shoulder up with the blade. This prevented the crew from having no lost time for the day.



Wednesday, July 25, 2018 Ryan Malone Gulf Coast - FM-92 HMA 2" Overlay Time: 7:00 - 17:00 (10hrs) Day: 47

Today I worked with our Jasper crew while they were performing a 2" overlay on FM-92 in Tyler Co. The crew was paving LOT 6 and using Type C sac B PG 76-22 bituminous mixture. The crew was paving the Southbound Shoulder to the bridge (Rush Creek), then a small section that was milled yesterday at 4" deep for base repairs. After the crew was finished with the base repairs they backed the paver up to the bridge and began to place the Southbound Shoulder again. The Southbound Shoulder to the bridge consisted of stations 20+40 to 52+18. The Southbound Shoulder past the bridge consisted of stations 53+98 to 104+30. The total tonnage for the day was 1074.09.



Thursday, July 26, 2018 Ryan Malone Gulf Coast - FM-92 HMA 2" Overlay Time: 7:00 - 17:00 (10hrs) Day: 48

Today I worked with our Jasper crew while they were performing a 2" overlay on FM-92 in Tyler Co. The crew was paving LOT 7 and using Type C sac B PG 76-22 bituminous mixture. The crew finished the Southbound Shoulder today and then returned to finish the Northbound Shoulder. The Southbound Shoulder consisted of stations 104+30 to 136+30 and the Northbound Shoulder consisted of stations 63+66 to 00+24. The crew finished the HMA overlay today for this project. The total tonnage for the day was 1428.00. The crew will be onsite tomorrow and Monday to finish shouldering up the project.


Friday, July 27, 2018 Ryan Malone Gulf Coast - Estimating Time: 7:00 - 17:00 (10hrs) Day: 49

Today I caught up on my daily reports. These reports consist of my in-field notes, my intern field report, and my reports for Lamar University. After I completed my reports I worked on a PowerPoint for our Annual Safety Meeting which is next Friday. Our HR assistant asked both of the intern groups to make a PowerPoint that covered a certain project that we worked on and briefly cover the key aspects of the project. My team covered the Jack Brooks Taxiway project which was a slip-form paving project. We listed the safety concerns of the project along with crew size, foreman, equipment, and estimated duration of the project.



Monday, July 30, 2018 Ryan Malone Gulf Coast - Estimating Time: 7:00 - 17:00 (10hrs) Day: 50

Today I completed our PowerPoint for our annual company safety meeting. I had our presentation reviewed by our safety manager, HR manager, and the company president. Once the PowerPoint was approved we were given two projects (one per team) and we were told we would be preparing and presenting a mini capstone for our company at the end of our internship. The project locations were 8th street in Port Arthur along with Lakeshore Dr. in Port Arthur. These are two completely different projects. 8th Street is a full depth repair with a HMA overlay. Lakeshore Drive concrete pavement. Both jobs have recently been bid by our company but our company wants to see the bid we come up with along with our scope of work and schedule to compare it to the original.



Tuesday, July 31, 2018 Ryan Malone Gulf Coast - City of Lumberton Park on FM 421 Time: 6:00 - 12:00 (6hrs) Day: 51

Today I worked at the City of Lumberton Park. We were laying 10 gauge steel mats that were 20'x8'. There was a storm approaching this morning so the crew was in a hurry to get the mats placed in the section to be poured on Thursday. Once the mats were placed we tied the steel and then placed 3" chairs under the rebar mat. At 10:30 the foreman told the crew to take a 30min break due to lightening in the area. Soon after we took a break the storm had reached the jobsite. The foreman stopped production for the day and sent the crew home.



Wednesday, August 1, 2018 Ryan Malone Gulf Coast - City of Lumberton Park on FM 421 Time: 6:00 - 16:00 (10hrs) Day: 52

Today I worked at the City of Lumberton Park. We laid forms for a new pour that will be completed next Thursday. After we placed the forms we checked grade on the mat to be placed. We then placed dowel bars in the existing concrete pavement and then started laying baskets on the mat. We placed the baskets every 60' and then secured them to the sub-base. Once the baskets were secured we checked the alignment of the forms to make sure they were to grade and at a 2% slope. We then placed the 10 gauge mats inside the formwork and secured them together. After the mat was secured we placed 3" chairs under the rebar.



Thursday, August 2, 2018 Ryan Malone Gulf Coast - City of Lumberton Park on FM 421 Time: 6:00 - 16:00 (10hrs) Day: 53

Today I worked at the City of Lumberton Park. The crew was placing Class P concrete in the section that we prepared on Tuesday. While the crew was placing PCC I went to shoot grade with our survey manager. I set stakes at every 50' station for 1,000 LF. The proposed expansion of the concrete drive is 18' wide so I placed the stakes at 20'. This allowed for a 2' offset for the crew to work around. Once the stakes were in place the survey manager checked elevations on the existing pavement which was 12' wide. We then calculated the existing slope and added it to the 20' widening length. After the calculation was complete we marked the stakes with the final grade.

- Difference in elevation (a-b)/length (12')*100 = % slope
- In order to extend the length with the slope included you take the % slope/100*length (20')
- The proposed length is 18' but with a 2' O/S it becomes 20'



Friday, August 3, 2018 Ryan Malone Gulf Coast - Estimating / Holiday Inn Annual Safety Meeting Time: 7:00 - 17:00 (10hrs) Day: 54

Today I reviewed my PowerPoint presentation that I will be presenting this afternoon. Once I finished reviewing my presentation I caught up on my daily reports for the week. At 12:00pm our annual safety meeting began with lunch at the Holiday Inn. Our meeting covered near miss reports, recordable injuries, and our safety manager talked about where we stand in rank with our other companies in the region. This is a beneficial meeting that is held once a year to reflect on the past year and to discuss what we can do better as a whole to implement safety culture within our company.



Monday, August 6, 2018 Ryan Malone Gulf Coast - Estimating Time: 7:00 - 17:00 (10hrs) Day: 55

Today I was assigned my final project to complete my internship. I will have until August 23rd to complete the project and then present the project the following day. This project covers full depth base repair and concrete pavement on Bluebonnet Ave. in Port Arthur. I spent the day reviewing the plans and reading through the detailed specifications of the project. Once I was finished with looking at the plans I went to Bluebonnet Ave. to take pictures of the project and to scope out any underlying potential problems with the job. Once I was finished I uploaded the pictures to my computer to use in our final presentation.



Tuesday, August 7, 2018 Ryan Malone Gulf Coast - Estimating Time: 7:00 - 17:00 (10hrs) Day: 56

Today I went to our Jasper office to get help on setting up my final project. Our Jasper PM/Estimator told me what all I needed to do to set up my take-off for the project. I created an excel document and began placing in the given quantities that were in the plans. Once all of the quantities were placed in excel I then started double checking the engineers numbers and calculations. This is a very crucial part of estimating because some numbers may be off. There was a calculation for proposed sidewalks in this project and the engineer was off by 20,000 SY. If you were to bid the given amount this would cause you to lose the job.



Wednesday, August 8, 2018 Ryan Malone Gulf Coast - Estimating Time: 7:00 - 17:00 (10hrs) Day: 57

Today I started setting up my bid items in excel for the Bluebonnet Ave. project. I took the bid item description and then assigned crew members, equipment, time, and quantities for a full day's production. You have to be very detailed in this part of the estimating process so you can be competitive and realistic at the same time. Once I entered half of the bid items it was time to go home for the day. Juan and I planned to space the project out over several days so we aren't rushed in our estimating process. This is so we can make sure that all of our numbers are correct and our bid price is accurate.



Thursday, August 9, 2018 Ryan Malone Gulf Coast - Estimating Time: 7:00 - 17:00 (10hrs) Day: 58

Today I finished setting up our bid items in excel. Once I completed the bid items Juan went through the excel workbook and added tables for reference along with a few other things. I then went to several of our PM's at our Beaumont office to see if our bid was realistic and reflected the project scope of work. Once we gathered information on what we could change to make our bid more feasible and economic we went into the excel workbook and added notes next to the changed bid items. We then printed the workbook and double checked our numbers once more.



Friday, August 10, 2018 Ryan Malone Gulf Coast - Estimating Time: 7:00 - 17:00 (10hrs) Day: 59

Today we started entering our bid items and estimate into our estimating software (HCSS Heavy-Bid). This is a very time consuming process because once you enter in bid items and prices you constantly have to look at your bid sum to see what total price you are at. Realistically we ended up changing quite a few of the items once we entered them into the bidding software just so we could save money and still get the job finished without delays. We didn't get all of the bid items entered into the software today, but we will finish this up in the early part of next week.

	Earnings			Deductions	
_	Jasper, TX 75951			Pay Frequency:	Weekly
	PO Box 253			Pay Period:	05/20/18 - 05/26/18
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p No.	Name / Address	Filing Stat	tus	Ref Number:	85060118
Cedar Par	k, TX 78613				
1320 Arro	w Point Dr Ste 307				

Amount

582.38

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1,265.26

-55.00

Balance

72.00

12,147.68

Description

Fica EE SS

Fica EE Med

Federal tax

401k Contribution

Amount

48.05

11.24

77.00

30.90

Amount

902.88

211.16

1,592.00

529.69

Amount

640.41

132.08

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2.50

0.00

-2.50

8.00

YTD Usage

Oldcastle Materials Texas, Inc.

Rate

16.01000

24.01500

Hrs/Units

Period Usage

0.00

40.00

5.50

Description

Regular

Holiday

Overtime 1.5

Paid Time Off

Leave Codes

LTD Premium Impute

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Ryan A. Malone PO Box 253 Jasper, TX 75951

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YTD Usage

Important Messages:

Oldcastle Materials Texas, Inc.

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Period Usage

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PO Box 253 Jasper, TX 75951

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Balance

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401k Contribution

Federal tax

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YTD Usage

Important Messages:

Oldcastle Materials Texas, Inc.

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Balance

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Fica EE SS

Federal tax

Fica EE Med

401k Contribution

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YTD Usage

Important Messages:

Jasper, TX 75951

Oldcastle Materials Texas, Inc.

Regular

Holiday

Overtime 1.5

Paid Time Off

Leave Codes

LTD Premium Impute

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	Jasper, TX 75951						Pay Frequency:	Weekly	202.4
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Balance

72.00

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Fica EE Med

401k Contribution

Federal tax

12.80

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LTD Premium Impute

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PTO 2-9 Year of Service

Holiday

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685.80		Total Current Net:							

Ryan A. Malone PO Box 253 Jasper, TX 75951

Oldcastle Materials Texas, Inc.

1320 Arrow Point Dr Ste 307

Cedar Park, TX 78613

	Earnings	D	eductions	
_	Jasper, TX 75951	Pay	Frequency: Weekly	_
	PO Box 253		Pay Period: 07/01/18 - 07/07/18	
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Overtime 1.5	24.01500	0.25	6.00	1,597.01
Holiday	16.01000	8.00	128.08	640.40
Paid Time Off			0.00	128.08
LTD Premium Impute			2.50	70.00
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7/13/18	85071318		607.06	Routing ID	Bank Account	Dep Type	Amount	
					Total Current Net:		607.06	
	Rvan A Malo	ne						

PO Box 253 Jasper, TX 75951

Oldcastle Materials Texas, Inc.

1320 Arrow Point Dr Ste 307

Cedar Park, TX 78613

p No.	Name / Address
634210	Ryan A. Malone

PO Box 253 Jasper, TX 75951

		Earnings		
		Year To Date		
Description	Rate	Hrs/Units	Amount	Amount
Regular	16.01000	40.00	640.41	16,630.57
Overtime 1.5	24.01500	14.50	348.22	1,945.23
Holiday			0.00	640.40
Paid Time Off			0.00	128.08
LTD Premium Impute			2.50	72.50
Txbl Tuition Reimbur			0.00	1,265.26
LTD Premium Offset			-2.50	-72.50
Leave Codes		Period Usage	YTD Usage	Balance
PTO 2-9 Year of Servi	ce	0.00	8.00	72.00

Filing Sta	tus
S	

0

 Ref Number:
 85072018

 Deposit Date:
 7/20/18

 Pay Period:
 07/08/18 - 07/14/18

 Pay Frequency:
 Weekly

	Deductions							
	This Pay Peri	od	Year To Date					
nt	Description	Amount	Amount					
57	Fica EE SS	61.45	1,282.29					
23	Fica EE Med	14.37	299.89					
10	Federal tax	115.00	2,242.00					
80	401k Contribution	39.55	773.77					
50								
26								
50								

Important Messages:

		This Pay Perio	d	Year To Date				
		Earnings Deductions		Net Pay	Earnings	Deductions	Net Pay	
		988.63	230.37	758.26	20,609.54	4,597.95	16,011.59	
Date	Ref No.	Am	ount	Your check h	as been deposited in	your bank accou	MALONERYAN	
7/20/18	85072018		758.26	Routing ID	Bank Account	Dep Type	Amount	
				(12)	Total Current Net:	·	758.26	
	Ryan A. Mal	one						

Jasper, TX 75951

1320 Arrow	Point Dr Ste 307								
Cedar Park	, TX 78613								
p No.	p No. Name / Address				Filing Stat	tus Ref Number:		85072718	
634210	34210 Ryan A. Malone S O Deposit PO Box 253 Pay P Jasper, TX 75951 Pay Frequencies					Deposit Date: Pay Period: Pay Frequency:	ate: 7/27/18 lod: 07/15/18 - 07/21/18 ncy: Weekly		
		Earnings			1		Deductions		
	This Pay	Period		Year To Date		This P	ay Period	1.1	Year To Date
Description	Rate	Hrs/Units	Amount	Amount	Description		1	Amount	Amount
Regular	16.01000	40.00	640.42	17,270.99	Fica EE SS			53.26	1,335.55
Overtime 1.5	24.01500	9.00	216.14	2,161.37	Fica EE Med			12.46	312.35

640.40

128.08

75.00

1,265.26

-75.00

Balance

72.00

Federal tax

401k Contribution

87.00

34.26

2,329.00

808.03

0.00

0.00

2.50

0.00

-2.50

8.00

YTD Usage

Period Usage

0.00

Important Messages:

Oldcastle Materials Texas, Inc.

Holiday

Paid Time Off

Leave Codes

LTD Premium Impute

Txbl Tuition Reimbur

LTD Premium Offset

PTO 2-9 Year of Service

Year To Date		This Pay Period				
Earnings Deductions Net Pa	Net Pay	Deductions	Earnings		2.00	
21,466.10 4,784.93 16,681.1	669.58	186.98	856.56			
MALONERY/ r check has been deposited in your bank account:	Your check ha	int	Amo	Ref No.	Date	
outing ID Bank Account Dep Type Amoun	Routing ID	669.58		85072718	7/27/18	
••••••7727 •••••••1262 C 669.58	******7727					
Total Current Net: 669.58						

Ryan A. Malone PO Box 253 Jasper, TX 75951 Oldcastle Materials Texas, Inc. 1320 Arrow Point Dr Ste 307 Cedar Park, TX 78613

_mp No.	Name / Address		Filing Status	Allow	Add'l Amt	Ref Number: 85080318
634210	Ryan A. Malone	FED	S	0	0.00	Deposit Date: 8/03/18
	PO Box 253					Pay Period: 07/22/18 - 07/28/18
	Jasper, TX 75951					Pay Frequency: Weekly

		Earnin	gs				Deductions	
¥	This Pay I	Period	_	Year	To Date	This Pay Per	iod	Year To Date
Description	Rate	Hrs/Unit	Amount	Hrs/Units	Amount	Description	Amount	Amount
Regular	16.01000	40.00	640.40	1,118.76	17,911.39	Fica EE SS	51.77	1,387.32
Overtime 1.5	24.01500	8.00	192.12	98.00	2,353.49	Fica EE Med	12.10	324.45
Holiday			0.00		640.40	Federal tax	84.00	2,413.00
Paid Time Off			0.00		128.08	401k Contribution	33.30	841.33
LTD Premium Impute	d		2.50		77.50			
Txbl Tuition Reimburs	e		0.00		1,265.26			
LTD Premium Offset			-2.50		-77.50			
Leave Codes		Period Usage	YTD U	sage	Balance			
PTO 2-9 Year of Serv	ice	0.00		8.00	72.00			

Important Messages:

		This Pay Perio	d		Yea	r To Date	
		Earnings	Deductions	Net Pay	Earnings	Deductions	Net Pay
		832.52	181.17	651.35	22,298.62	4,966.10	17,332.52
Date	Ref No.	Am	oust	Vaurahaalu			MALONERYAN
Date	Nel HU.		June	Four check I	has been deposited in	your bank accou	nt:
3/03/18	85080318		651.35	Routing ID	Bank Account	Dep Type	Amount
				*******7727	*************1262	c	651.35
					Total Current Net:		651.35
	Ryan A. Malo	ne					
	PO Box 253						
	Jasper, TX 75	5951					

Oldcastle Materials Texas, Inc. 1320 Arrow Point Dr Ste 307 Cedar Park, TX 78613

_mp No.	Name / Address		Filing Status	Allow	Add'l Amt	Ref Number: 85081018
634210	Ryan A. Malone	FED	S	0	0.00	Deposit Date: 8/10/18
	PO Box 253					Pay Period: 07/29/18 - 08/04/18
	Jasper, TX 75951					Pay Frequency: Weekly

		Earnin	gs				Deductions	
	This Pay I	Period		Year	To Date	This Pay Per	iod	Year To Date
Description	Rate	Hrs/Unit	Amount	Hrs/Units	Amount	Description	Amount	Amount
Regular	16.01000	40.00	640.42	1,158.76	18,551.81	Fica EE SS	53.26	1,440.58
Overtime 1.5	24.01500	9.00	216.14	107.00	2,569.63	Fica EE Med	12.46	336.91
Holiday			0.00		640.40	Federal tax	87.00	2,500.00
Paid Time Off			0.00		128.08	401k Contribution	34.26	875.59
LTD Premium Impute	bed		2.50		80.00			
Txbl Tuition Reimbur	se		0.00		1,265.26			
LTD Premium Offset			-2.50		-80.00			
Leave Codes		Period Usage	YTD U	sage	Balance			
PTO 2-9 Year of Ser	vice	0,00		8.00	72.00			

Important Messages:

		This Pay Perio	d		Yea	ar To Date	
		Earnings	Deductions	Net Pay	Earnings	Deductions	Net Pay
		856.56	186.98	669.58	23,155.18	5,153.08	18,002.10
Date	Ref No.	Amo	ount	Your check I	nas been deposited in	your bank accou	MALONERYAN
8/10/18	85081018		669.58	Routing ID	Bank Account	Dep Type	Amount
				*******7727	*********1262	С	669.58
					Total Current Net:		669.58
	Ryan A. Malor	ne					
	PO Box 253	. A					
	Jasper, TX 75	5951					

Analysis of SLO Measure Results and Action Plan

(Completed every three years according to the analysis cycle)

SLO 13: Understand construction risk management.

Metric: Following courses-course learning outcomes as direct measures.

CMGT 4325 Construction Project Management

CLO 5(BD) Explain principles of and methods for project management functions.

CMGT 4370 Construction Safety Management

CLO 1(BD) Describe the impact of accidents on construction projects.

 Date:
 Click or tap to enter a date.

 Course
 Analysis and Action

 CMGT 4325
 Analysis:

 Construction
 Arainagement

 Action Plan:
 Action Plan:

 CMGT 4370
 Analysis:

 Construction
 Analysis:

 Analysis:
 Analysis:

Student Learning Outcomes – Measure 1

(Completed each year by Instructor after review of student work)

For each course, select whether the student learning outcome was met, partially met, unmet, or not reported. Attach documentation supporting the findings, including student's work example, rubrics, questions, or criteria, used in this determination.

SLO 13: Understand construction risk management.

CMGT 4325 Construction Project Management

CLO 5(BD) Explain principles of and methods for project management functions.

Target: Average score of class to be 80 or higher out of 100 points.

Semester:	Metric:	Instructor:	Date:
Spring 2018	Term project	Hwang	9/25/2018

Findings

Enrollment	Min. Score	Max. Score	Ave. Score	Met/Part/Unmet/NR
8	91%	98%	94.63%	Met

Note: See the attached sample.

#	Student	Score	#	Student	Score		#	Student	Score
1	Student 1	91	16				31		
2	Student 2	91	17				32		
3	Student 3	91	18				33		
4	Student 4	98	19				34		
5	Student 5	98	20				35		
6	Student 6	98	21				36		
7	Student 7	95	22				37		
8	Student 8	95	23				38		
9			24				39		
10			25				40		
11			26				41		
12			27				42		
13			28]	43		
14			29				44		
15			30				45		

Collected Student Work: Place the collect student's work after this page for each course, each time taught.

4325 TP 2

Student	Score
1	91
2	91
3	91
4	98
5	98
6	98
7	95
8	95
Average	94.63
SD	3.249

CMGT 4325/5325 Construction Project Management

Term Project 2 - Project Risk Management - Evaluation

Group Work

Total Credit 100 points (This project accounts for 30% of the entire grade for 'Type 4 Project,' See Grading Policy and Evaluation in the syllabus).

Instructor: Prof. Seokyon Hwang

Submission:

Per group, submit an electronic file (MS Word or PDF) of report via Blackboard—handwritten documents are not acceptable. Do not change the format of this document, such as font size and type as well as line spacing. Name your file as 'PJ2-Group Name,' Due – 11 pm, Sunday, 2/26

Identified risk factor, Time, Cost, Quality, Safety, Environment.

Group Name: 1; Group Members: Pedro Escamilla, Leoany Alvarez, Mason Harris

Criterion	Max. Score	Your Score
Format and organization (How well is the report written?)	10	10
Completeness (Are all activities completely performed and discussed in the report?)	30	25
Thoroughness (Are the issues deeply and sufficiently addressed?)	30	30
Technical feasibility/soundness (Are the suggested solutions implementable?	20	18
Use of graphical and tabular data	10	8
Total	100	91

Other Comments:

Is there only one risk factor associated with the project? It cannot be true. Your discussion on the impacts are well elaborated. Be encouraged to use graphical data.

Grown Name	2. Groun	Members.	Ben Hodges.	Shawn Miller	Gabriel Nevala
Group munic.	-, Or oup	moniocio.	Don Houses,	Children trainer,	Outrier instand

Criterion	Max. Score	Your Score
Format and organization (How well is the report written?)	10	10
Completeness (Are all activities completely performed and discussed in the report?)	30	30
Thoroughness (Are the issues deeply and sufficiently addressed?)	30	30
Technical feasibility/soundness (Are the suggested solutions implementable?	20	20
Use of graphical and tabular data	10	8
Total	100	98

Other Comments:

Identification of risk factors is reasonably done. Impacts are well summarize. Overall, the report is succinctly written, yet informative and well organized. Use graphical data.

Group Name: 3; Group Members: Jeramy Zachary, Rhett Willamson

Criterion	Max. Score	Your Score
Format and organization (How well is the report written?)	10	10
Completeness (Are all activities completely performed and discussed in the report?)	30	30
Thoroughness (Are the issues deeply and sufficiently addressed?)	30	27
Technical feasibility/soundness (Are the suggested solutions implementable?	20	19
Use of graphical and tabular data	10	9
Total	100	95

Other Comments:

You have identified risk factors very well. You could elaborate the impacts in your report a bit more.

CMGT 4325/5325 Construction Project Management

Term Project 2 - Project Risk Management

Group Work

Total Credit 100 points (This project accounts for 30% of the entire grade for 'Type 4 Project,' See Grading Policy and Evaluation in the syllabus). Instructor: Prof. Seokyon Hwang

Submission:

Per group, submit an electronic file (MS Word or PDF) of report via Blackboard-handwritten documents are not acceptable.

Do not change the format of this document, such as font size and type as well as line spacing. Name your file as 'PJ2-Group Name.'

Instruction:

It is assumed that you have watched the video listed in Activities (see Program of Week). Identify potential risk factors associated the project. Discuss how those factors can present challenges to project team in accomplishing five project objectives: time, cost, quality, safety, and environment. Create a report (50 points)

Evaluation

The following table presents criteria and percent scores for grading the report.

Criterion	Max, Score
Format and organization (How well is the report written?)	10
Completeness (Are all activities completely performed and discussed in the report?)	30
Thoroughness (Are the issues deeply and sufficiently addressed?)	30
Technical feasibility/soundness (Are the suggested solutions implementable?	20
Use of graphical and tabular data	10

Group Formation:

Each group may have three to four students. Make a group on your own. Put the names of group members below.

Group Name: Group 1	Group Members: Pedro Escamilla Leoany Alvarez Mason Harris	
911	00	

Answer Sheet:

Type your answer in the table below (unlimited length):

Identified risk factors: The river will flood 150,000 acres of land.

That the concrete used for the dam will crack from the pressure of the river The river must be diverted so that construction can take place.

Time:

It takes longer to build the dam because the Chinese government needs relocate all the people that live in the areas that would be affected by the flooded water. The Chinese need to make sure that everyone is transferred safely before they can proceed in building the dam.

It will take a longer time to make the bed rock stable, which is used by driving tubing in the granite to fill the voids with grout. This will cause the dam placed on top to be more stable, preventing it from cracking under pressure.

Diverting the river so that portions of the dam can be built is a huge time consumption. Im sure it took several years just prepping and diverting this river just so the dam can be built. I found it very interesting how they would create a dry section of land to build on by daming areas around it.

Cost:

The relocation of people would cause the Chinese government to spend a large amount of money for the operation. Which would add up to the total price of the dam.

Without driving tubes to place grout under dams, there could be a high possibility of the dam caving in and causing floor throughout the areas surrounding the river. This will not only cause the people around to relocate but it will also cost the rebuild of the dam.

Obviously this is an insanely huge project. For the temporary dams built to divert the river, there would be a huge cost in materials and labor needed to do this. The temporary damed areas seemed to be built with pyramid shaped concrete that can be moved easily by cranes or excavators. Not to mention all of the labor that goes into this project. The cost of the labor would be incredibly high.

Quality:

The dam would cause the river to elevate its water elevation up to 60 stories high. Which would cause flooding and the need of strong materials for the dam. The dam needs to be made of thick concrete to withstand the river's force. The dam needs to sit on a strong foundation to keep it in place and to avoid the water current from moving it away.

The quality inserted into building the dam will increase the life span of the dam, which contributes to the maximization of the control of the river, preventing it from flooding the areas surrounding the river.

The quality of diverting this river must be second to none. The area diverted is what will become the new soil for the dam to be built on top of. But also it must be able to hold the mighty river until the dam is constructed. *Safety:*

People would need to relocate so they won't get affected by the water. The dam needs to be constructed of strong material, so it won't crumble from the river's strong current.

The safety measures included in creating this massive dam should have increased when the issue of correcting the river bedrock to stabilize the dam build above it. Quickly acknowledging the problem was the best thing they could do, because without that structure underneath everything would have caved in, even including the labors.

Safety is a highly important part of this job. Since this is such a large part of the project with a lot of moving parts.

The diversion of the river needs to be watched closely. Anyone and everyone must be aware of the surrounding hazards and should probably wear a lifejacket at all times just to be safe.

Environment:

The water elevation will rise up 60 stories high and cover 150,000 acres of land. This will cause people and animals to move. Plants and homes will get destroyed with the flooding water.

The insert of ground underneath the dams will cause that river bedrock to stand firm and will help keep that area surrounding the river to be well kept. This structure will help not only the workers, but also the people living around this area from flooding.

The environment is literally changing very drastically. I know that in one area where the river was diverted, the bottom of the river then became dry. Others used to be just water until new land was then dumped on top of it and built up.

Student Learning Outcomes – Measure 2

(Completed each year by Instructor after review of student work)

For each course, select whether the student learning outcome was met, partially met, unmet, or not reported. Attach documentation supporting the findings, including student's work example, rubrics, questions, or criteria, used in this determination.

SLO 13: Understand construction risk management.

CMGT 4370 Construction Safety Management

CLO 1(BD) Describe the impact of accidents on construction projects.

Target: Average score of class to be 80 or higher out of 100 points.

Semester:	Metric:	Instructor:	Date:
Fall 2018	Homework	Hwang	2/11/2019

Findings

Enrollment	Min. Score	Max. Score	Ave. Score	Met/Part/Unmet/NR			
15	60%	100%	94.00%	Met			
Note: See the attached sample.							

Measured on a scale of 30-points.

#	Student	Score	#	Student	Score	#	Student	Score
1	Albright	100	16			31		
2	Escamilla	100	17			32		
3	Frank	100	18			33		
4	Harris	85	19			34		
5	Hernandez	60	20			35		
6	Juneau	100	21			36		
7	Kappelman	90	22			37		
8	Kight	100	23			38		
9	Kim	95	24			39		
10	Krautz	100	25			40		
11	Pham	100	26			41		
12	Reichard	100	27			42		
13	Rodriguez	100	28			43		
14	Walston	100	29			44		
15	Zachary	80	30			45		

Collected Student Work: Place the collect student's work after this page for each course, each time taught.

CMGT 5370 & 4370 Construction Safety Management Term Project 2 – OSHA Compliance and Site Observation Individual Work Total Credit: 100 points

Student Name: __Erik Rodriguez_____

Evaluation: Excellent and exemplary work. 100/100

Submission:

Do not change the format of this document, such as font size and type as well as line spacing. Submit an electronic file (MS Word) via Blackboard—handwritten documents are not acceptable. Name your file as 'TP2-First Name-Last Name.' Due: See Blackboard.

In this homework, students are asked to conduct a site observation. First, choose a construction project site that you can observe either from outside of the site or from inside of the site. As you conduct an observation, take photographs so that you can use them in your work.

- 1. Find the examples of OSHA compliance, i.e., good practices satisfying OSHA's regulations. (50 points)
 - a) According to OSHA 1910.179 (B)(6)(ii), only designated personnel should be permitted to operate a crane. We are currently utilizing a crane out on the site to which the whole crew is aware of who are the only two operators designated to operate the crane. These are the only 2 workers who have operating it.



Figure 1. Crane

b) According to OSHA's standard number 1926.106(A), all employees near water where the danger of drowning exists, should be provided with US Coast Guard approved life jackets. This project is taking place by a port's canal. All of the scope of work consists of executing work by the water and all of the workers were properly wearing buoyant work vests.

c) Osha 1926.1425(C) states that while an operator is not moving a suspended load, no employees should be in the fall zone except for the employees hooking, unhooking or guiding a load. In figure 2, the two men at the bottom of the suspended load are helping guide the sheet pile into its place.



Figure 2. Suspended Load

- 2. Find unsafe conditions and behaviors. Given the findings, propose your solutions. It is highly recommended to reference OSHA regulations associated with those observed. (50 points)
 - a) 29 CFR 1926.95(A) is the general standard of the use of PPE which include the use of gloves. There was an incident to which a worker was ignorant to this safety regulation and was not wearing gloves to protect his hands. One solution could be to have a safety manager on site at all times to be aware of these kinds of mistakes and fix them. A cheaper alternative solution would be to provide glove grabber clips to all workers that could safely carry their gloves when they take them off. This would guarantee to always have gloves on them.



Figure 3. Worker missing gloves

b) According to a company policy, a flagger must be present every time heavy equipment is being operated near pedestrian or traffic. In this incident a track hoe was being operated near traffic and a flagger was not present to help the HEO be aware of his surroundings nor incoming traffic of the heavy equipment being use near the road. A solution would be to train all personnel to be flaggers so that there is always a flagger on site even if they also carry a different classification.



Figure 4. Heavy Equipment near road

Analysis of SLO Measure Results and Action Plan

(Completed every three years according to the analysis cycle)

SLO 14: Understand construction accounting and cost control.

Metric: Following courses-course learning outcomes as direct measures.

CMGT 4270 Strategic Analysis and Evaluation

CLO 3(BD) Understand, apply, analyze, or create various types of construction management learning outcomes through an exit examination.

CMGT 4420 Construction Cost Estimating and Analysis

CLO 6(BD) Demonstrate an analytical understanding of cost accounting and industry formats including: Cash Basis, Billings Method, Percentage of Completion and Completion of Contract Method.

 Date: Click or tap to enter a date.

 Course
 Analysis and Action

 CMGT 4270 Strategic Analysis and Evaluation
 Analysis:

 Action Plan:
 Action Plan:

 CMGT 4420 Construction Cost Estimating and Analysis
 Analysis:

 Action Plan:
 Action Plan:

Student Learning Outcomes – Measure 1

(Completed each year by Instructor after review of student work)

For each course, select whether the student learning outcome was met, partially met, unmet, or not reported. Attach documentation supporting the findings, including student's work example, rubrics, questions, or criteria, used in this determination.

SLO 14: Understand construction accounting and cost control.

CMGT 4270 Strategic Analysis and Evaluation

CLO 3(BD) Understand, apply, analyze, or create various types of construction management learning outcomes through an exit examination.

Target: Average score of class to be 70 or higher out of 100 points.

Semester:	Metric:	Instructor:	Date:
Spring 2018	Exit Exam	McCrary	9/21/2018

Findings

Enrollment	Min. Score	Max. Score	Ave. Score	Met/Part/Unmet/NR			
12	52%	70%	63%	Unmet			
Note: See the attached sample.							

#	Student	Score	#	Student	Score		#	Student	Score
1	Student 1	54%	16				31		
2	Student 2	52	17				32		
3	Student 3	68	18				33		
4	Student 4	64	19				34		
5	Student 5	70	20				35		
6	Student 6	64	21				36		
7	Student 7	62	22				37		
8	Student 8	66	23				38		
9	Student 9	58	24				39		
10	Student 10	60	25				40		
11	Student 11	64	26				41		
12	Student 12	70	27				42		
13			28				43		
14			29] [44		
15			30] [45		

Collected Student Work: Place the collect student's work after this page for each course, each time taught.

Exit Exam 2018 Results Summary

	LO 14: Construction Cost C	Controls				
Total Points	Possible for CMGT 4420 (C	MGT 4260 and CM	GT 4320):	50		
Name	CMGT 4260	CMGT 4320	Total	%		
Leoany Alvarez	18	9	27	54%		
Dylan Armstrong	17	9	26	52%		
Esther Salazar	17	17	34	68%		
Spencer Wommack	16	16	32	64%		
Casey Burleigh	19	16	35	70%		
Ryan Stanley	18	14	32	64%		
Samantha Thayer	15	16	31	62%		
Brett Rogers	20	13	33	66%		
Rhett Williamson	14	15	29	58%		
Brittan Brown	13	17	30	60%		
Brittany Stutes	18	14	32	64%		
Luis Suarez	17	18	35	70%		
		Count of	Students:	12		
Minimum Score Received:						
	Maximum Score Received:					
		Aver	age Score:	63%		

LAMAR UNIVERSITY Reese Construction Management Program 1900 Program's Exit Exam CLOSED BOOK, CLOSED NOTES.

TIME LIMIT: 3 hours.

Please place your answer on the scan sheet given. Only one answer on this exam form will be graded. Thank you.

COURSE	NO.	QUESTION	ANSWER
4260	87.	 The two documents that are key to proper fiscal management of any firm are the: a. Ledger and Revenue Statement b. Balance Sheet and Revenue Statement c. Balance Sheet and Income Statement d. Revenue and Income Statement 	c
4260	88.	The Balance Sheet is typically broken down into key accounts including Owner's Equity. a. True b. False	a.
4260	89.	The Balance Sheet is typically broken down into key accounts including Vehicles. a. True b. False	b
4260	90.	The Balance Sheet is typically broken down into key accounts including Current Liabilities. a. True b. False	a
4260	91.	The Balance Sheet is typically broken down into key accounts including Loans. a. True b. False	b
4260	92.	The Balance Sheet is typically broken down into key accounts including Current Assets. a. True b. False	a
4260	93.	One of the three most commonly used types of depreciation methods in the construction industry is the Sum of the Year Digits Method. a. True b. False	a
4260	94.	The General Overhead Ratio = General Overhead divided by Total Assets. a. True b. False	b

LAMAR UNIVERSITY Reese Construction Management Program 1900 Program's Exit Exam CLOSED BOOK, CLOSED NOTES.

TIME LIMIT: 3 hours.

Please place your answer on the scan sheet given. Only one answer on this exam form will be graded. Thank you.

COURSE	NO.	QUESTION	ANSWER
4260	95.	Reasons for Poor Estimating include: a. perceived delays and higher overhead costs caused by planning b. overly optimistic management c. perceived delays and higher overhead costs caused by planning and overly optimistic management d. estimating process costs	C
4260	96.	One of the three most commonly used types of depreciation methods in the construction industry is the Declining Balance Method. a. True b. False	a
4260	97.	One of the three most commonly used types of depreciation methods in the construction industry is the Straight Line Method. a. True b. False	a
4260	98.	One of the three most commonly used types of depreciation methods in the construction industry is the Curved Line Method. a. True b. False	b
4260	99.	A break even analysis is a method of determining; a. when cost exceeds revenue b. when revenue exceeds cost c. when cost equals revenue d. when profit exceeds overhead	c
4260	100.	Payroll taxes and Unemployment Insurance include the Federal and State component called Social Security & Medicare Tax. a. True b. False	a
4260	101,	Payroll taxes and Unemployment Insurance include the Federal and State component called General Liability. a. True b. False	b
TIME LIMIT: 3 hours.

COURSE	NO.	QUESTION	ANSWER
4260	102.	Payroll taxes and Unemployment Insurance include the Federal and State component called Union Payments and Other Fringes. a. True b. False	b
4260	103.	Payroll taxes and Unemployment Insurance include the Federal and State component called FICA. a. True b. False	a
4260	104.	Payroll taxes and Unemployment Insurance include the Federal and State component called Retirement Benefits paid by the employer. a. True b. False	b
4260	105.	Unit costs can vary widely, and do not depend on: a. volume of work b. weather conditions c. project factors d. variations in the skill and productivity of workers	c
4260	106.	Determine the Break Even Volume (revenue) of work, when Loss/Profit = \$0, for a company with a fixed overhead of \$350,000 and a contribution margin of 9.5%. Useful Equations: Contribution Margin = Revenues - Construction Costs - Variable Overhead CM Ratio = Contribution Margin/Revenue Loss/Profit = CM Ratio (Revenue) - Fixed Overhead a. Revenue = 350,000/0.095 = \$3,684,211 b. Revenue = 350,000 * 0.095 = \$33,250 c. Revenue = 350,000 (1 + 0.095) = \$383,250	a.
4260	107.	Direct Costs include: a. permanent material, management, equipment, and subcontractor costs b. labor costs c. equipment, permanent material, labor, and subcontractor costs d. subcontractor, management, labor costs	c

TIME LIMIT: 3 hours.

COURSE	NO.	QUESTION	ANSWER
4320	115.	One purpose of estimating is to determine budget costs. a. True b. False	a.
4320	116.	One purpose of estimating is to determine time for completing each activity. a. True b. False	a.
4320	117.	One of the purposes of estimating is to clearly identify scope of work. a. True b. False	a.
4320	118.	A large property with many contour changes is difficult to estimate. To make the process more simple, yet still a reasonable estimate of quantity, estimators often use grid systems. Which of the following is a grid-system for earthwork measurement? a. Average end area method b. Trianguated Irregular Network method c. Pit method d. Double end area method	c.
4320	119.	Which item is not included in the Bid Price? a. Material costs b. Equipment rental costs c. Contingency costs d. Tax e. Opportunity costs	e.
4320	120.	Which item is not one of three types of bonds that Contractors typically submit on a project? a. Bid bond b. Worker's compensation c. Performance d. Payment	b.

TIME LIMIT: 3 hours.

	NO.	QUESTION	WSW
	121.	Use the time and location indices below to prepare the conceptual cost estimate for a building with 10,000 sf of floor area. The building is to be constructed 2 years from now in city A. A similar type of building that cost \$1,000,000 and contained 12,000 sf was completed 3 years ago in city B. Estimate the probable cost of the proposed building.	a.
4320		Time Index: 3 years ago (100), 2 years ago (110), 1 year ago (120), current year (130) Location Index: City A (1100), City B (1000)	
		a. 1,572,500 b. 1,672,500 c. 1,674,000	
-	122.	Using the equation: Swell = (Loose volume/Bank volume) - 1, to solve the following:	b.
		The required volume of soil for backfilling is 50 BCY (bank cubic yards). The swell factor of the soil is reported to be 0.2	
00		What is the loose volume of soil (in cubic yards) that needs to be hauled in to the site?	
43.		a. 55 cy	
		c. 65 cy	
		d. 80 cy	
1	123.	What are the five basic categories of units used in estimating quantity takeoffs?	a.
320		b. Labor, Equipment, Material, Subs, Overheads	
4		c. Concrete, Masonry, Carpentry, Roofing, Piping	
ļ.	124.	Quantities measured in takeoffs are measured, meaning they are calculated using the sizes	a.
~		and dimensions shown on the drawings without adjustments for waste.	
432(b. "gross"	
		c. "with allowances"	
l.	125.	Productivity of Labor & Equipment is influenced by a large number of factors which can include:	a.
20		a. weather Conditions, Motivation of Labor Force b. Transportation Costs and Material Costs	
43		c. Equipment Costs, Subcontractor Pricing, Insurance Costs	

TIME LIMIT: 3 hours.

COURSE	NO.	QUESTION	ANSWER
4320	126.	The costs of labor, material, and equipment expended on items that were measured in a takeoff are known as costs, and the general expenses of a project comprise all the additional, indirect job costs. a. management b. important c. direct	с.
4320	127.	Computers have become indispensable in the construction industry for their use in estimating, but to use them accurately, estimators must first understand takeoff methods, providing the ability to accurately troubleshoot computer output and to evaluate data from a computerized estimating system. a. manual b. trigonometric c. accounting	a.

Exit Exam 2018 Results Summary

			Sec.				MGT 43	20		-			-
Q#	115	116	117	118	119	120	121	122	123	124	125	126	127
ANSWERS:	9	а	а	c	e	b	а	b	a	а	а	c	а
Leoany Alvarez	а	b	b	а	e	d	b	c	b	b	а	c	a
Dylan Armstrong	а	b	b	a	d	b	C	b	b	b	C	c	a
Esther Salazar	b	a	b	d	e	b	a	b	a	b	a	c	a
Spencer Wommack	9	b	a	a	e	b	c	b	a	b	a	c	a
Casey Burleigh	a	a	b	b	e	b	c	b	а	b	a	c	a
Ryan Stanley	6	D	a	b	e	b	D	d	a	b	a	C	a
Samantha Thayer	9	a	b	а	e	C	D	b	a	a	a	c	a
Brett Rogers	a	D	D	a	e	D	D	a	a	D	a	C	a
Rnett Williamson	9	a	a	D	a	D	а	D	D	D	a	c	a
Brittan Brown	a	a	a	D	e	D	C	D	a	B	a	C	a
Brittany Stutes	a	a	D	D	e	D	c	D	a	D	C	c	a
Luis Suarez	a	D	a	a	e	D	a	D	b	a	a	c	a
u-incorrect table	1						-			-	-	_	-
x=incorrect table		1			1	120	MG1 43	20			1.435	1 425	
Q#	115	116	11/	118	119	120	121	122	123	124	125	126	12/
pts possible	1	1	1	2	2	2	2	2	2	2	2	2	2
Leoany Alvarez	-	x	×	x		x	x	×	x	x			-
Esther Salazar	in the second	×	×	×	×		×	-	×	×	×	-	
Sooncor Wommark	x		×	x						×		-	-
Casey Burloich		x		X	-	-	X	1	1	X		-	1
Rivan Stanley	-	-	×	X	-	-	X		12	X		-	-
Samaotha Thawar	in the second	×		×			X	x	-	×	-		-
Brett Rogers		1.0	X	x		×	X						-
Rhett Williamson	1	×	×	×		-	×	×	3	x	10000		1.2000
Brittan Brown	-	-		×	×			-	X	×			
Brittany Stutor		-		÷	-		*	1.0	200000	*		-	
Luic Suproz		~	*	×		-	×	-		x	×	-	-
Luis Suarez	-			×					X			-	-
% Correct	92%	50%	42%	0%	83%	83%	25%	75%	67%	17%	83%	100%	100%
Q#	115	116	117	118	119	120	121	122	123	124	125	126	127
names/possible	1	1	1	2	2	2	2	2	2	2	2	2	2
Leoany Alvarez	1	0	0	0	2	0	0	0	0	0	2	2	2
Dylan Armstrong	1	0	0	0	0	2	0	2	0	0	0	2	2
Esther Salazar	0	1	0	0	2	2	2	2	2	0	2	2	2
Spencer Wommack	1	0	1	0	2	2	0	2	2	0	2	2	2
Casey Burleigh	1	1	0	0	2	2	0	2	2	0	2	2	2
Ryan Stanley	1	0	1	0	2	2	0	0	2	0	2	2	2
Samantha Thayer	1	1	0	0	2	0	0	2	2	2	2	2	2
Brett Rogers	1	0	0	0	2	2	0	0	2	0	2	2	2
Rhett Williamson	1	1	1	0	0	2	2	2	0	0	2	2	2
Brittan Brown	1	1	1	0	2	2	0	2	2	0	2	2	2
Brittany Stutes	1	1	0	0	2	2	0	2	2	0	0	2	2
Luis Suarez	1	0	1	0	2	2	2	2	0	2	2	2	2
	-					0	MGT 432	20	atel Dais	to Descib	In fire shi		
	Marris				-			- 1	otal Poin	Deints	e for this	Total	23
	lane	Alvaraz								Points	curve	rotal	2004
	Dulan	nivarez						-	-	9	0	9	39%
	Esther C	alarar			-				-	17	0	17	740/
	Esther S	Maran	eb							1/	0	17	74%
	Spencer	womma	LK					_		16	0	10	70%
	Casey Bu	urleign					-			16	0	16	10%
	Ryan Sta	inley								14	0	14	61%
	Samanth	ha Thayer			-					16	0	16	70%
	Brett Ro	gers	_		_					13	0	13	57%
	Rhett W	illiamson								15	0	15	65%
	Brittan Brown 17 0 17										17	74%	
	Brittany	Stutes	-			-				14	0	14	61%
	Luis Sua	rez								18	0	18	78%
	Count of Students										tudents.	12	
					-			-		Minimum	Score R	eceived.	39%
	1.000						_			Maximum	Score R	eceived.	78%
										and a start of the	Averag	e Score:	63%
											Averag	C SCUIE.	0270

Exit Exam 2018 Results Summary

	1000	in cas									CMGT 42	60	2	1000	-				1000	2 1	1235
Q#	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105	106	107
ANSWERS:	c	a	b	a	b	a	a	b	C.	a		b	c	a	b	b	a	b	c	a	c
Leoany Alvarez	c	a	b	a	b	а	b	a	c	a	а	a	c	b	b	а	a	b	d	b	c
Dylan Armstrong	d	ь	b	a	а	a	b	a	c	b	a	b	c	а	b	b	b	b	d	a	E
Esther Salazar	c	a	b	a	b	а	а	b	c	b	b	b	а	а	a	6	b	b	b	b	c
Spencer Wommack	d	b	b	a	a	а	b	а	b	a	a	a	5	a	b	b	a	b	b	3	c
Casey Burleigh	b	a	b	a	b	а	b	a	c	b	a	а	c	а	b	ь	a	b	b	а	c
Ryan Stanley	c	b	b	a	b	a	b	b	c	b	a	b	E	b	b	b	b	b	b	c	c
Samantha Thayer	c	a	b	a	b	а	a	a	b	a	b	a	c	а	b	a	b	6	b	c	c
Brett Rogers	c	a	b	6	b	а	b	a	c	a	в	b	c	a	b	b	a	a	d	b	C
Rhett Williamson	a	а	b	ь	a	a	a	a	c	b	b	a	c	а	a	b	a	b	b	c	c
Brittan Brown	d	a	b	b	3	a	a	a	c	a	b	3	c	3	3	a	a	3	b	c	c
Brittany Stutes	c	b	b	b	b	b	a	a	c	a	a	b	c	b	b	b	a	b	b	c	c
Luis Suarez	c	2	b		3	b	a		c	2	3		r	h	3	h	3	h	h	6	r.
	-		1 0				1	-	-	-				1 .			1 4	1 0			
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0#	97	0.0	80	00	01	07	02	0.4	OF	06	07	0.0	00	1 100	101	102	103	104	105	106	107
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Leopov Alvarez			-	-	-		-								-	-	-		2		-
Dylan Armstrong	-	~	-			-	*		-		-	×	-	×	-	*	-	1		×	
Esther Salazar	^	-	-	-		Long Street	-	<u>^</u>	1	-				-		-	*	(Contraction of the local states)	*		
Soancar Wommack		~			~	-							~		*				*	*	
Carey Burlaish	-	<u>^</u>		-	^ _	-	- î	÷.	Â			÷	-	-	-			1.000	â		
Ruan Stanlay	-										-	*			1.0000		-	-	×		
Samootho Thavas	-	^	-	-		-	*		1000			-		*		-		1000	×	*	-
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Brett Nogers	1100.200	-	-	-	-	-	×	×		-	-				-	-		×	x	×	
Knett Williamson	x	-		x	x	-	-	x	-	×	x	x		-	x				x	x	-
Brittan Brown	×	-		×	×	-		×	-		×	×	-	-	×	×		×	×	x	
Brittany Stutes	-	x	-	x	-	×		X					-	×		-		1	×	x	-
Luis Suarez	-				×	×		x			L	×	-	x	x	-			x	×	
% Correct	58%	67%	100%	75%	58%	83%	50%	17%	83%	58%	67%	42%	92%	67%	67%	75%	67%	75%	0%	25%	100%
	(H			-						0	MGT 42	50									1
Q#	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105	106	107
names/possible	2	1	1	1	1	1	1	1	2	1	1	1	2	1	1	1	1	1	2	2	2
Leoany Alvarez	2	1	1	1	1	1	0	0	2	1	1	0	2	0	1	0	1	1	0	0	2
Dylan Armstrong	0	0	1	1	0	1	0	0	2	0	1	1	2	1	1	1	0	1	0	2	2
Esther Salazar	2	1	1	1	1	1	1	1	2	0	0	1	0	1	0	1	0	1	0	0	2
Spencer Wommack	0	0	1	1	0	1	0	0	0	1	1	0	2	1	1	1	1	1	0	2	2
Casey Burleigh	0	1	1	1	1	1	0	0	2	0	1	0	2	1	1	1	1	1	0	2	2
Ryan Stanley	2	0	1	1	1	1	0	1	2	0	1	1	2	0	1	1	0	1	0	0	2
Samantha Thayer	2	1	1	1	1	1	1	0	0	1	0	0	2	1	1	0	0	0	0	0	2
Brett Rogers	2	1	1	- 1	1	1	0	0	2	1	1	1	2	1	1	1	1	0	0	0	2
Rhett Williamson	0	1	1	0	0	1	. 1	0	2	0	0	0	2	1	0	1	1	1	0	0	2
Brittan Brown	0	1	1	0	0	1	1	0	2	1	0	0	2	1	0	0	1	0	0	0	2
Brittany Stutes	2	0	1	0	1	0	1	0	2	1	1	1	2	0	1	1	1	1	0	0	2
Luis Suarez	2	1	1	1	0	0	1	0	2	1	1	0	2	0	0	1	1	1	0	0	2

	CMGT 4260					
Total Points Possible for this C						
Name	Points Curve Tot	al %				
Leoany Alvarez	18 0 18	67%				
Dylan Armstrong	17 0 17	63%				
Esther Salazar	17 0 17	63%				
Spencer Wommack	16 0 16	59%				
Casey Burleigh	19 0 19	70%				
Ryan Stanley	18 0 18	67%				
Samantha Thayer	15 0 15	56%				
Brett Rogers	20 0 20	74%				
Rhett Williamson	14 0 14	52%				
Brittan Brown	13 0 13	48%				
Brittany Stutes	18 0 18	67%				
Luis Suarez	17 0 17	63%				
Cour						
	Minimum Score Receive	d: 48%				
	Maximum Score Receive	d: 74%				
	Average Sco	e: 62%				

Student Learning Outcomes – Measure 2

(Completed each year by Instructor after review of student work)

For each course, select whether the student learning outcome was met, partially met, unmet, or not reported. Attach documentation supporting the findings, including student's work example, rubrics, questions, or criteria, used in this determination.

SLO 14: Understand construction accounting and cost control.

CMGT 4420 Construction Cost Estimating and Analysis

CLO 6 (BD) Demonstrate an analytical understanding of cost accounting and industry formats including: Cash Basis, Billings Method, Percentage of Completion and Completion of Contract Method.

Target: Average score of class to be 80 or higher out of 100 points.

Semester:	Metric:	Instructor:	Date:
Fall 2018	Quiz 1	Hwang	2/4/2019

Findings

Enrollment	Min. Score	Max. Score	Ave. Score	Met/Part/Unmet/NR						
20	0%	80%	64.25%	Unmet						
Note: See the attached sample.										

#	Student	Score	#	Student	Score	#	Student	Score
1	Christopher	75	16	Abigail	80	31		
2	Pedro	65	17	Lucas	70	32		
3	Joshua	80	18	Levi	0	33		
4	Mason	75	19	Cameron	0	34		
5	Juan	80	20	Jeramy	80	35		
6	Daniel	75	21			36		
7	Lester	35	22			37		
8	William	70	23			38		
9	James	75	24			39		
10	Jean	60	25			40		
11	Anthony	80	26			41		
12	Ryan	80	27			42		
13	Shawn	70	28			43		
14	John	75	29			44		
15	Erik	60	30			45		

Collected Student Work: Place the collect student's work after this page for each course, each time taught.

?

Seok Hwang 203 My Institution Courses Edit Mode is: • ON 2018_Fall_CMGT_4420_49F_2 - Construct Cost EstimatAnalysis_OL_AUG_27 Grade Center Grade Details Grade Test: Quiz 1 Grade Test: Quiz 1 Assign a grade and feedback for the current test attempt. Expand the **Test Information** section to clear the student's attempt or edit the test. More Help Hide User Names Jump to... Viewing 12 of 18 gradable items Ryan Malone (Attempt 1 of 1) \odot **Test Information**

QUESTI	ON 1: ESSAY	80	out of 100 points										
5	Problem 1 – 14 (True/False): 5 points/problem												
%	1. The amount of the performance bond of a project linearly increases as the value (cost) of a project grows.												
	2. A drawing that shows the front surface of a building is a plan view of the building.												
	3. Determining the unit cost of concrete placement crew is a process of	workbook est	imating.										
	4. Door schedule is a part of construction drawing documents.												
	5. A change order is issued by the owner during the construction phase.												
	6. Bonds submitted by contractors to compete in bidding include bid, payment, and worker's compensation bon												
	7. The general contractor obtains the unit costs for equipment from its supplier's quotes.												
	 Finding how many cubic yards of clay can be excavated by a selected l process of basic estimating. 	oackhoe (exc	avation equipment) is a										
	9. Contract documents of a construction project consist of two general c	ategories: bu	siness and legal.										
	10. Bid price must include a contingency cost regardless of project condit	10. Bid price must include a contingency cost regardless of project conditions.											
	11. The total cost of a project comprises three categories of cost—materia	11. The total cost of a project comprises three categories of cost—material, equipment, and subcontractor costs.											
	12. Conceptual estimating begins with creating a checklist of work to be d	12. Conceptual estimating begins with creating a checklist of work to be done.											
	13. The primary purpose of estimating is to summarize the identified costs required to complete a pr accordance with the contract plans and specifications.												
	14. The accuracy of the estimate and the level of project definition (how d correlated.	etail a projec	t is defined) are positively										

Grade Test: Quiz 1 - 2018_Fall_CMGT_4420_49F_2 - ... estimated to be 20 units/hr under normal working condition (8 hours/day). 15. Determine the duration of the work, assuming a normal working condition in days (decimal number). 16. Determine the labor cost of the work. 17. You are estimating the cost of building a shed (a small storage building). Its cost is estimated to range between \$1,000 (base estimate) and \$1,200 (most expensive). The likelihood to finish the project for \$1,200 is 0.2. How much additional money should you prepare in addition to \$1,000 according to the theory of expected net risk. Given 1. T Answer: 2. F 3. T 4. T 5. F 6. F 7. T 8. T 9. F 10. T 11. F 12. T 13. T 14. T 15. 20*8= 160hrs --> 1000units/160hrs --> 6.25 Days 16. 4*50= 200, 2*25=50, 1000units/20unitsperhr = 50 units per day*\$250perhour = \$12,500 17.200*0.2 = \$40 Correct Answer: Answers: 1. False 2. False 3. True 4. True 5. False 6. False 7. True 8. True 9. False 10. False 11. False 12. False 13. False 14. True 15. 1,000 units / 20 units/hr = 50 hrs; 50 hrs / 8 hrs/day = 6.25 days 16. \$250/hr * 50 hrs = \$12,500

17. Max. risk = \$1,200 -\$1,000 =\$200; Expected net risk = \$200 * 0.2 = \$40

Analysis of SLO Measure Results and Action Plan

(Completed every three years according to the analysis cycle)

SLO 15: Understand construction quality assurance and control.

Metric: Following courses-course learning outcomes as direct measures.

CMGT 4270 Strategic Analysis and Evaluation

CLO 3(BD) Understand, apply, analyze, or create various types of construction management learning outcomes through an exit examination.

CMGT 4325 Construction Project Management

CLO 3(BD) Explain fundamental functions of project management.

Date: Click or tap to enter a date.

zater ener of tu	
Course	Analysis and Action
CMGT 4270 Strategic Analysis and Evaluation	Analysis:
	Action Plan:
CMGT 4325 Construction Project Management	Analysis:
	Action Plan:

Student Learning Outcomes – Measure 1

(Completed each year by Instructor after review of student work)

For each course, select whether the student learning outcome was met, partially met, unmet, or not reported. Attach documentation supporting the findings, including student's work example, rubrics, questions, or criteria, used in this determination.

SLO 15: Understand construction quality assurance and control.

CMGT 4270 Strategic Analysis and Evaluation

CLO 3(BD) Understand, apply, analyze, or create various types of construction management learning outcomes through an exit examination.

Target: Average score of class to be 70 or higher out of 100 points.

Semester:	Metric:	Instructor:	Date:
Spring 2018	Exit Exam Score	McCrary	9/19/2018

Findings

Enrollment	Min. Score	Max. Score	Ave. Score	Met/Part/Unmet/NR
12	39%	89%	63%	Unmet
Note: See the attach	ed sample			

Note: See the attached sample.

#	Student	Score	#	Student	Score	#	Student	Score
1	Student 1	83%	16			31		
2	Student 2	39	17			32		
3	Student 3	44	18			33		
4	Student 4	78	19			34		
5	Student 5	56	20			35		
6	Student 6	89	21			36		
7	Student 7	56	22			37		
8	Student 8	78	23			38		
9	Student 9	72	24			39		
10	Student 10	39	25			40		
11	Student 11	83	26			41		
12	Student 12	39	27			42		
13			28			43		
14			29			44		
15			30			45		

Collected Student Work: Place the collect student's work after this page for each course, each time taught.

Exit Exam 2018 Results Summary

			2.20		100	CMG	T 4325					-
Q#	57	58	59	60	61	62	63	64	65	66	67	68
ANSWERS:	b	b	a	d	а	a	a	b	a	b	b	c
Leoany Alvarez	b	b	а	d	а	b	a	b	a	a	b	c
Dylan Armstrong	a	а	а	d	b	а	а	a	а	a	c	a
Esther Salazar	c	а	а	d	a	a	а	b	b	а	а	а
Spencer Wommack	b	b	b	d	a	a	а	b	а	a	b	c
Casey Burleigh	b	a	b	c	a	a	b	b	а	а	b	c
Ryan Stanley	b	b	a	d	а	a	а	b	а	а	b	C
Samantha Thayer	b	а	b	d	а	a	а	a	а	C	d	c
Brett Rogers	b	b	a	d	a	a	a	b	а	а	d	c
Rhett Williamson	b	а	а	d	a	а	a	b	a	c	c	C.
Brittan Brown	b	b	b	c	b	a	а	b	а	а	d	b
Brittany Stutes	b	b	а	d	a	a	а	a	а	c	b	c
Luis Suarez	в	9	b	d	а	a	a	b	а	a	d	a
	-				_	20215	110000		_			
x=incorrect table	11		-		-	CMG	T 4325		-	-		
Q#	57	58	59	60	61	62	63	64	65	66	67	68
pts possible	2	1	2	2	1	1	1	1	1	2	2	2
Leoany Alvarez	-			1	1	x				×		
Dylan Armstrong	x	x			x			x		x	x	×
Esther Salazar	x	x				1000		-	×	×	×	×
Spencer Wommack			×					-	-	×	-	-
Casey Burleigh	-	×	x	×		2	x	1		x		
Ryan Stanley			-	-						x		
Samantha Thayer		x	x	1	-		-	x	1	x	x	1
Brett Rogers				-		-		-		x	×	-
Rhett Williamson		×					6		-	x	x	1.000
Brittan Brown	-		x	x	x			12	-	×	×	x
Brittany Stutes		1	1			1	1	X	-	×	1	-
Luis Suarez	x	x	X				-		-	x	x	x
% Correct	75%	50%	58%	83%	83%	92%	92%	75%	92%	0%	42%	67%
0#	57	50	50	60	61	CMG 62	62	64	65	66	67	60
u#	3/	30	59	2	10	02	05	04	05	00	0/	08
	2	1	2	2	1	1	1	1	1	2	2	2
Dulan Armstrong	2	0	2	2	0	1	1	1	1	0	2	2
Ecther Salazar	0	0	2	2	1	1	1	1	1	0	0	0
Spencer Wommack	2	1	0	2	1	1	1	1	1	0	2	2
Casou Burlaigh	2	0	0	2	1	1	0	1	1	0	2	2
Ryan Stanley	2	1	2	2	1	1	1	1	1	0	2	2
Samantha Thaver	2	0	0	2	1	1	1	1	1	0	2	2
Brett Rogers	2	1	2	2	1	1	1	0	1	0	0	2
Rhett Williamson	2	0	2	2	1	1	1	1	1	0	0	2
Brittan Brown	2	1	0	0	0	1	1	1	1	0	0	2
Brittany Stutes	2	1	2	2	1	1	1	0	1	0	2	2
uis Suarez	0	0	0	2	1	1	1	1	1	0	0	
						CMG	r 4325					
	(F						T	Total Poin	ts Possib	le for this	Course:	18
	Name					_			Points	Curve	Total	%
	Leoany A	Ivarez					_	0	15	0	15	83%
	Dylan Ar	mstrong							7	0	7	39%
	Esther Sa	alazar							8	0	8	44%
	Spencer	Womma	ck						14	0	14	78%
	Casey Bu	rleigh							10	0	10	56%
	Ryan Sta	nley							16	0	16	89%
	Samanth	a Thaver	-						10	0	10	56%
	Brett Ro	gers							14	0	14	78%
	Rhett Wi	lliamson				-			13	0	13	72%
	Brittan B	rown							7	0	7	30%
	Brittany	Stuter	-	_		-			15	0	15	920/
	Unic Sugar	P7							7	0	7	200/
	cuis sual	UL.						-	1	U	/	39%
	-						-		Co	ount of S	tudents:	12
	-							-	Minimum	Score R	eceived:	39%
	-	_					-	1	Maximum	Score R	eceived:	89%
		_								Averag	e Score:	63%

TIME LIMIT: 3 hours.

COURSE	NO.	QUESTION	ANSWER
3320	64.	"Quality is free" means that meeting quality in costruction does not require costs. a. True b. False	b.
3320	65.	Is the Standard Agreement typically included in a Bid Proposal Package? a. Yes b. No	a,
3320	66.	The strongest project responsibility is expected from a(n) organization. a. matrix b. task force c. line-and-staff d. functional	b.
3320	67.	Which of the following is not one of the three possible actions that can result from, and therefore can follow, quality control? a. Rework b. Change order c. Acceptance of work d. Adjustment of work process	b.
3320	68.	The choices below contain two formal methods of conflict resolution, among many other possibilities that are typically implemented in the construction industry. Which of these two precedes litigation? a. Mediation b. Arbitration c. Both mediation and arbitration	c.

TIME LIMIT: 3 hours.

COURSE	NO.	QUESTION	ANSWER
3320	57.	Fill in the blank: A project is a temporary endeavor undertaken to create a product or service. a. permanent b. unique c. construction	b.
3320	58.	Change orders always increase project risk by increasing the amount of time and cost required to complete a project. a. True b. False	b.
3320	59,	Fill in the blank: is a group of employees who perform similar duties and meet at periodic intervals, often with management, to discuss work-related issues, and to offer suggestions and ideas for improvements, as in production methods or quality control. a. Quality circle b. Quality control team c. Quality group	a.
3320	60.	 Which of the following is not one of the four categories of leading hazards on the construction jobsite? a. Falls b. Caught in/between c. Mechanical d. Poisoning 	d.
3320	61.	Are prices typically included in a Bid Proposal Package? a. Yes b. No	a.
3320	62.	Are bonds typically included in a Bid Proposal Package? a. Yes b. No	a.
3320	63.	In Design-Build project delivery method, is the selected contractor responsible for creating design of a project? a. Yes b. No	a.

Student Learning Outcomes – Measure 2

(Completed each year by Instructor after review of student work)

For each course, select whether the student learning outcome was met, partially met, unmet, or not reported. Attach documentation supporting the findings, including student's work example, rubrics, questions, or criteria, used in this determination.

SLO 15: Understand construction quality assurance and control.

CMGT 4325 Construction Project Management

CLO 3(BD) Explain fundamental functions of project management.

Target: Average score of class to be 80 or higher out of 100 points.

Semester:	Metric:	Instructor:	Date:
Spring 2018	Homework	Hwang	9/19/2018

Findings

Enrollment	Min. Score	Max. Score	Ave. Score	Met/Part/Unmet/NR
8	42	93	82	Met
	1 1			

Note: See the attached sample.

#	Student	Score	#	Student	Score	#	Student	Score
1	Student 1	93	16			31		
2	Student 2	87	17			32		
3	Student 3	89	18			33		
4	Student 4	91	19			34		
5	Student 5	74	20			35		
6	Student 6	91	21			36		
7	Student 7	42	22			37		
8	Student 8	89	23			38		
9			24			39		
10			25			40		
11			26			41		
12			27			42		
13			28			43		
14			29			44		
15			30			45		

Collected Student Work: Place the collect student's work after this page for each course, each time taught.

CMGT 4325/5325 Construction Project Management Homework 5 – Quality Management Individual Work Total Credit 100 points Instructor: Prof. Seokyon Hwang

Student Name:

Submission:

Do not change the format of this document, such as font size and type as well as line spacing. Submit an electronic file (MS Word or PDF) via Blackboard—handwritten documents are not acceptable. Name your file as 'HW5-First Name-Last Name.' Due – 11 pm, Sunday, 1/22

Instruction:

<u>Cause-and-Effect Analysis Exercise (50 points)</u>: Conduct research on the quality of CIP pile construction and slurry wall construction to identify a quality-related problem for each construction job. Then, conduct cause-and-effect analysis regarding the following factor groups: material, labor, equipment, and methods/procedures. Identify detail factors for each factor group that are contributing to the occurrence of the identified quality problem. As a result, you will produce two sets of cause-and-effect analysis (fishbone diagrams).

Development of ITP (50 points): Refer to the attachment-the specification section of concrete work. You may reference an example presented in the lecture material—Lesson 10. If necessary, you may also use other references.

EVALUATION OF DELIVERABLES

Deliverable	Weight (%)	CR 1	CR 2	Total	Weighted Total
Cause-and-Effect Analysis	50				
Development of ITP	50	1.1		1	1

Criteria

Criterion 1: Completeness (Is the expected deliverable completely created?)

Criterion 2: Thoroughness (Are the issues associated with the deliverable deeply and sufficiently addressed?)

Student Work Example.



ISHIKAWA DIAGRAM FOR SLURRY WALL

Total: 43/50 50/50 C-482 93/100/

4 of 5

ANS 2:

Please find the attached excel sheet for ITP of CIP Concrete



	Activity and Characteristic	Peference			Inspection Points				
No.	to be Checked	Documents	Acceptance Criteria	Verifying Document	Sub- Con	CONTR	Testin g agency	Owner	
1	Pre-Activity Check		50/57	2 150)					
1,1	Verify method statement for piling is approval	Method statement	Approval method statement	Method statement	R	R	R		
1.2	Verification of Design Mix For Concrete - Type of Concete - Mix Propotion - Slump	AFC Drawings	Approved /Accepted Concrete Design Mix by Engineer	Trial Mix Design Test Report	4	w	w		
1.3	Concrete Design Mix & Method of Casting	AFC Drawings	As Per Project Spec. & Engineer Design / Instruction	Trial Mix Result Report	1	R	R		
1.4	Verify pile design is approval.	AFC Drawings	Approved for Construction Drawing	Approved for Construction Drawing	1	R	R		
2	Products								
2.1	Reinforcing Material	AFC Drawings	ASTM Standards	Licensor Document	4	R	R		
2.2	Concrete Material	AFC Drawings	ASTM Standards	Licensor Document	Ţ	s	5		
2.3	Water								
2.4	Related Material	AFC Drawings	Reglets > 0.0217 inch Absorptive Cover = 9 oz./sq yd. Liquid Membrane Forming Curing Compound < 0.55 kg/m2 / 200ft2 / gal.	Licensor Document / Inspection & Test Document/ Owner Specifications	T	w	5		
			gal.						

2.5	Proportioning and Design Mixes	AFC Drawings	Project Specification	ACI 211.1 / ACI 301	4	w	R	
3	Admixtures	Contractor's Specification	Contractor's Specification	Local Regulatory Agency	R	R		
4	Concrete Mixing	Contractor's Specification	Contractor's Specification	ASTM C 192 / Inspection & Test Document	1	w	R	н
5	Execution	1			14	1	-	
5.1	Vapor Barrier Installation	AFC Drawings	Lap Jonts 6" and sealing with manufacturer's pressure sensitive tape	Section 07110 - Vapor Barrier	4	w		R.
5,2	Joints - Isolation Joint in Slabs-on- Grade -Contraction Joint in Slabs- on-Grade	AFC Drawings	Project Specification	For Isolation Joints - Division 7 Section "Joint Sealants" For Contraction Joints - As per Inspection & Test Document	1	w		
5.3	Concrete Placement	AFC Drawings	Project Specification	ACI 304 / ACI 309	Ì,	w	w	н
4.1	Finishing Formed surface	AFC Drawings	Project Specification	Inspection & Test Document/ Owner Specifications	1	w	5	
4.2	Concrete Curing and protetion	Contractor's Specification	Contractor's Specification	Inspection & Test Document	1	w		
4.3	Water Vapor Additive	Project Specification	-	Inspection & Test Document	J.	R		н
4.4	Waste Management	Project Specification	Visual	Section 01100	s	s	5	

LEGEND: I: Execution of Inspection and Test R: Review S: Surveillance W: Witness H: Hold Point