TEXAS A&M UNIVERSITY

SYLLABUS

College of Architecture
DEPARTMENT OF CONSTRUCTION SCIENCE

A. COURSE

Title and Number:	**COSC 275 - Estimating I**	
Term:	**SPRING – 2022**	
Meeting Times and Locations:	**Lecture T, R – 501-504**	**08:00AM – 08:50AM, ARCC 105**
CRN 10648	**Lab T, R - 501**	**09:35AM – 10:50AM, FRAN 103**
CRN 14248	**Lab T, R – 502**	**11:10AM – 12:25PM, FRAN 103**
CRN 14249	**Lab T, R – 503**	**12:45PM – 02:00PM, FRAN 103**
CRN 17159	**Lab T, R – 504**	**03:55PM – 05:10PM, FRAN 103**
Instructional Type and Method	**Lecture and Laboratory, Face-to-Face**	

B. COURSE DESCRIPTION, PREREQUISITES AND CREDITS

- **Systems approach to determining required quantities of construction materials; quantification of various types of foundation systems, structural systems and building envelope systems; excerpts of contract documents from a variety of different building projects**
- **Prerequisites:** COSC 253 and co-enrollment in COSC 175, COSC 254
- **Credits 3. 2 Lecture Hours. 3 Lab Hours. 3(2-3)**

C. MINIMUM REQUIRED LEARNING OUTCOMES

- **University Student Learning Outcomes:** Master the depth of knowledge required for a degree
- **ACCE Student Learning Outcomes:** SLO Create Construction project quantity take-off
- **Rubrics:** Quantitative literacy, see attached chart

D. ADDITIONAL LEARNING OUTCOMES

- Apply plan and specification reading skills - **SLO #4**
- Organize the quantification/takeoff process for items of work utilizing technology - **SLO #4&#10**
- Prepare and perform the quantification portion of an estimate - **SLO #4**
- Introduction to identifying ethical issues - **SLO #6**
- Analyze construction documents for planning and management of construction process – **SLO #7**

- Introduction to common materials, methods and equipment in construction - **SLO #8**

E. INSTRUCTOR INFORMATION

Name:	**Richard C. Palmer**
Email:	**rpalmer@tamu.edu**
Phone Number:	**979-458-9379**
Office Hours:	**M 02:00PM-03:00PM**
	W 02:00PM-03:00PM or By Appointment
Office Location:	**FRAN, Room 302**

Questions: This semester we will be using Piazza for class discussion. The system is highly catered to getting you help fast and efficiently from classmates, the TA, and myself. Rather than emailing questions to the teaching staff, I encourage you to post your questions on Piazza. If you have any problems or feedback for the developers, email team@piazza.com.

F. TEXTBOOKS/RESOURCE MATERIALS/TOOLS

- The College of Architecture requires all students to have a personal laptop computer. This laptop is required to perform classroom activities. You will need your laptop in this course and you are required to bring an operational laptop and all required items to class every day. ***Note that your laptop computer must be able to operate with Windows Formatted Programs for this class. The Apple/Mac or Other Non-Compatible Operating Systems may not work with the course issued software.*** **NO EXCEPTIONS!**
- You will be notified via e-mail or eCampus when the course drawings for this class will be made available for your purchase from Copy Corner – 2307 Texas Ave., College Station, TX 77840
  Phone - (979) 694-2679 Fax - (979) 693-1367
  Email - plans@copycorner.com Contact Person – Jill Becka
- You will need the following supplies on the second day of class:
  - USB flash drive or stick to transfer important files/information to perform assignments.
  - Architect's Scale
  - Engineer's Scale
  - 25' Tape Measure
  - Non-Programmable 12-digit calculator with a double zero (00) key (not a cell phone)
  - Three Ring Binder or Folder for lecture notes, class work and handouts
  - Red, Black and Blue Pens
  - #2 Pencil for Exams
  - Scantron Form O-101607-TAMU Grey for Exams (3 Each)
- **Programmable calculators are NOT approved for use in this course and will not be allowed.**

G. GRADING POLICIES

Grade Distribution:

A—89.50 - 100
B—79.50 – 89.49
C—69.50 – 79.49
D—59.50 – 69.49
F--<59.49

Grade Weights:

Lab/In Class & Homework Assignments	40%
Quizzes 3 Each (5% each)	15%
Service Assignment	5%
Exams 2 Each (12.5% each)	25%
Final Exam	15%

To calculate your grade in this course, copy the grades posted in Canvas and from the emails you receive from Scanning Services into the GRADE CALCULATOR Excel spreadsheet that you build in Lab. The grades in Canvas only reflect the grades you received on assignments, quizzes, and service assignment, not your exam grades. Do not use the average grade calculated by Canvas it is NOT correct. Your grade can only be calculated using the GRADE CALCULATOR.

SLO Assessment will be made as indicated in CALENDAR OF ACTIVITIES

Please note that LATE ASSIGNMENTS WILL NOT BE ACCEPTED unless accompanied by a legitimate University Excused Absence Pursuant to Rule 7. (Please see I. SPECIAL PROVISIONS – 3. Absences)

H. CALENDAR OF ACTIVITIES AND MAJOR ASSIGNMENT DATES

For Sections 501- 504

***** The instructor reserves the right to make required changes to the CALENDAR OF ACTIVITIES AND MAJOR ASSIGNMENT DATES, as required. *****

Wk	Day	Dates	Class Details for Spring 2022	SLO
1	T	18-Jan	***First day of Classes Spring 2022***	
	T	18-Jan	LECTURE 1 – Syllabus Review, Expectations, Class Orientation, Excel Review	
	T	18-Jan	LAB 1 – Excel Formatting, Quantification Units, Build Grading Sheet	**4, 10**
	R	20-Jan	LECTURE 2 – Specification CSI Formatting, Plan and Specification Review	
	R	20-Jan	LAB 2 – Setting Up Quantitative Takeoff sheets, Basic Measurements and Comparisons, ***Knowledge Assessment Review Exercise SLO***	**4, 10**

Wk	Day	Dates	Class Details for Spring 2022	SLO
2	M	24-Jan	Last Day to Add/Drop Classes 5 PM	
	T	25-Jan	LECTURE 3 – Verifying that the Quantification is Correctly Defined and the Interrelationship between Plans and Specifications is Correct	
	T	25-Jan	LAB 3 –Where do I start? – Quantitative Take Off, Foundation, Structural and Building Envelope, relating to Plans and Specifications Analysis. ***Measuring Exercise in Lab***	**4, 7, 8, 10**
	R	27-Jan	LECTURE 4 – General Review of Plans and Specification in preparation for Quantification of Elements of a Project. Cut & Fill, Foundation, Structural.	
	R	27-Jan	LAB 4 – ***Assignment 1*** - Plan and Specification Information Exercises	**4, 7, 8, 10**

Wk	Day	Dates	Class Details for Spring 2022	SLO
3	T	01-Feb	LECTURE 5 – Division 02 Soils Report Review and analyzation of Soil Cut and Fill for Building Foundations and pad preparations.	
	T	01-Feb	LAB 5 – Division 02 Review of Soils Cut and Fill for Building Foundations. ***Assignment 2*** – Unit Quantifications of Soil for Building Foundation Cross Section and Int. & Ext. Corner Quantification	**4, 7, 8, 10**
	R	03-Feb	LECTURE 6 – Division 02 Soils Cut and Fill for Building Foundations and pad preparations. Complex Takeoff of Building Foundation Pad Elements	
	R	03-Feb	LAB 6 – Division 02 ***Assignment 2*** – Unit Quantifications of Soil for Building Foundation Cross Section and Int. & Ext. Corner Quantification	**4, 7, 8, 10**

Wk	Day	Dates	Class Details for Spring 2022	SLO
4	T	08-Feb	LECTURE 7 – **Guest Speaker: Whiting-Turner Contracting Company**	
	T	08-Feb	LAB 7 – ***Assignment 3*** – On-Screen Take Off Instruction and Review, Drilled Pier Quantification	**4, 7, 8, 10**
	R	10-Feb	LECTURE 8 – Division 03 Concrete Complex Takeoff of Drilled Piers, Building Foundations, and Correlation to Site Grading Plans	
	R	10-Feb	LAB 8 – ***Assignment 3*** – On-Screen Take Off Instruction and Review, Drilled Pier Quantification	**4, 7, 8, 10**

Wk	Day	Dates	Class Details for Spring 2022	SLO
5	T	15-Feb	LECTURE 9 – Division 03 Concrete Complex Takeoff of Drilled Piers, Building Foundations	
	T	15-Feb	LAB 9 – ***Assignment 3*** – Concrete Quantification of Building Drilled Piers and Building Foundation Elements	**4, 7, 8, 10**
	W	16-Feb	*CIAC Career Fair Social from 6pm to 9pm.*	
	R	17-Feb	*CIAC Career Fair, All COSC classes cancelled except those starting at 5:00pm or later. To be held at the Brazos County Expo.*	
	F	18-Feb	*Classes will be held as usual.*	

Wk	Day	Dates	Class Details for SPRING 2022	SLO
6	T	22-Feb	LECTURE 10 – Division 03 Concrete Complex Takeoff of Drilled Piers, Building Foundations.	
	T	22-Feb	LAB 10 – ***Assignment 4*** – Grade Beam and Slab Quantification	**4, 7, 8, 10**
	R	24-Feb	LECTURE 11 – Division 03 Concrete Complex Takeoff of Drilled Piers, Building Foundations Elements.	
	R	24-Feb	LAB 11 – ***Assignment 4*** – Grade Beam and Slab Quantification, Exam 1 Review	**4, 7, 8, 10**

Wk	Day	Dates	Class Details for Spring 2022	SLO
7	M	28-Feb	***Mid Semester Grades Due by 12 Noon***	
	T	01-Mar	LECTURE 12 – Exam 1 Review	
	T	01-Mar	**LAB 12 – Exam 1 SLO**	**4, 7, 8, 10**
	R	03-Mar	LECTURE 13 – Division 03 Concrete Complex Takeoff of Drilled Piers, Building Foundations Elements, Elevated Slabs	
	R	03-Mar	LAB 13 – ***Assignment 5*** – Elevated Concrete Structure and Slabs	**4, 7, 8, 10**

Wk	Day	Dates	Class Details for Spring 2022	SLO
8	M	07-Mar	***Mid Semester Grades Due by 11 AM***	
	T	08-Mar	LECTURE 14 – Division 03 Concrete Complex Takeoff of Drilled Piers, Building Foundations Elements, Elevated Slabs	
	T	08-Mar	LAB 14 – ***Assignment 5*** – Elevated Concrete Structure and Slabs	**4, 7, 8, 10**
	R	10-Mar	LECTURE 15 – Division 03 Concrete Complex Takeoff of Drilled Piers, Building Foundations Elements, Elevated Slabs	
	F	10-Mar	LAB 15 – ***Assignment 5*** – Elevated Concrete Structure and Slabs	**4, 7, 8, 10**

Wk	Day	Dates	Class Details for Spring 2022	SLO
9	M	14-Mar	**Spring Break – March 14 - 18**	

Wk	Day	Dates	Class Details for Spring 2022	SLO
10	T	22-Mar	LECTURE 16 – Going from Foundation to Structural Steel to Building Envelope, how the Quantification of these Elements are Tied Together	
	T	22-Mar	LAB 16 – ***Assignment 6*** Structural & Miscellaneous Steel Take Off	**4, 6, 7, 8, 10**
	R	24-Mar	LECTURE 17 – Structural Steel Quantification, Understanding Columns, Beams, Miscellaneous Steel Items and Bar Joists and how to Read Marks and Information about Structural Steel Quantifying Columns, Beams, Miscellaneous Steel Items and Bar Joists	
	R	24-Mar	LAB 17 – ***Assignment 6*** Structural & Miscellaneous Steel Take Off	**4, 6, 7, 8, 10**

Wk	Day	Dates	Class Details for Spring 2022	SLO
11	T	29-Mar	LECTURE 18 – Building Envelope Review Various Types and Construction for Takeoff and Quantification	
	T	29-Mar	LAB 18 – ***Assignment 7*** Building Envelope Takeoff – Masonry, Stud & Tilt Wall	**4, 6, 7, 8, 10**
	W	30-Mar	*Field Trip Day, all upper level and graduate classes cancelled and upper level and graduate students required to go on a field trip*	
	R	31-Mar	LECTURE 19 – Building Envelope Review Various Types and Construction for Takeoff and Quantification	
	R	31-Mar	LAB 19 – ***Assignment 7*** Building Envelope Takeoff – Masonry, Stud & Tilt Wall	**4, 6, 7, 8, 10**

Wk	Day	Dates	Class Details for Spring 2022	SLO
12	T	05-Apr	LECTURE 20 – Building Envelope Review Various Types and Construction for Takeoff and Quantification	
	T	05-Apr	LAB 20 – ***Assignment 8*** Building Envelope Takeoff – Masonry, Stud & Tilt Wall	**4, 6, 7, 8, 10**
	R	07-Apr	LECTURE 21 – Building Envelope Review Various Types and Construction for Takeoff and Quantification	
	R	07-Apr	LAB 21 – ***Assignment 8*** Building Envelope Takeoff – Masonry, Stud & Tilt Wall	**4, 6, 7, 8, 10**

Wk	Day	Dates	Class Details for Spring 2022	SLO
13	T	12-Apr	LECTURE 22 – Building Envelope Review Various Types and Construction for Takeoff and Quantification	
	T	12-Apr	LAB 22 – ***Assignment 8*** Building Envelope Takeoff – Masonry, Stud & Tilt Wall	**4, 6, 7, 8, 10**
	R	14-Apr	LECTURE 23 – Sureties and Bonding	
	R	14-Apr	LAB 23 – Exam 2 Review	**4, 6, 7, 8, 10**

Wk	Day	Dates	Class Details for Spring 2022	SLO
14	T	19-Apr	LECTURE 24 – Exam 2 Review and Questions	
	T	19-Apr	LAB 24 ***Exam 2 SLO***	**4, 6, 7, 8, 10**
	T	19-Apr	***Q Drop Deadline***	
	R	21-Apr	**Muster**	
	R	21-Apr	LECTURE 25 – Exam 2 Post Review and Discussion, The Takeoff and Quantification of Change Orders	
	R	21-Apr	LAB 25– ***All Service Assignments are Due*, *Service Assignment Class Presentations***	**4, 6, 7, 8, 10**
	F	22-Apr	Hard Hat Ceremony, Rudder Auditorium	

Wk	Day	Dates	Class Details for Spring 2022	SLO
15	T	26-Apr	LECTURE 26 – Final Exam Review	
	T	26-Apr	LAB 26 – Final Exam Review	**4, 6, 7, 8, 10**
	R	28-Apr	LECTURE 27 – Final Exam Review	
	R	28-Apr	LAB 27 – Final Exam Review	**4, 6, 7, 8, 10**
	R	28-Apr	Scholarship and Awards Banquet at Texas A&M Bethancourt Ballroom and Rudder Auditorium	

Wk	Day	Dates	Class Details for Spring 2022	SLO
16	M	02-May	*Pursuant to Student Rule 8.3 (http://student-rules.tamu.edu/rule08), NO regular course examinations (except for laboratory and one-hour courses) shall be given during the 15th week of classes*	
	T	03-May	*Redefined day, students attend their **Friday** classes. Pursuant to Student Rule 8.3 (http://student-rules.tamu.edu/rule08), NO regular course examinations (except for laboratory and one-hour courses) shall be given during the 15th week of classes.*	
	T	03-May	**Last Official Day of Class Spring Semester**	
	W	04-May	*Wednesday, Reading day, No classes, projects, presentations, or exams may be given/due.*	
	R	05-May	Thursday thru Tuesday, Spring semester final examinations	
	F	06-May	**Final Exam 05/06/2022 From 1:00PM to 3:00PM – RM ARCC 105**	**4, 6, 7, 8, 10**

1. **Americans with Disabilities Act (ADA) Policy Statement**

Texas A&M University is committed to providing equitable access to learning opportunities for all students. If you experience barriers to your education due to a disability or think you may have a disability, please contact Disability Resources in the Student Services Building or at (979) 845-1637 or visit disability.tamu.edu. Disabilities may include, but are not limited to attentional, learning, mental health, sensory, physical, or chronic health conditions. All students are encouraged to discuss their disability related needs with Disability Resources and their instructors as soon as possible.

2. **Title IX and Statement on Limits to Confidentiality**

Texas A&M University is committed to fostering a learning environment that is safe and productive for all. University policies and federal and state laws prohibit gender-based discrimination and sexual harassment, including sexual assault, sexual exploitation, domestic violence, dating violence, and stalking.

With the exception of some medical and mental health providers, all university employees (including full and part-time faculty, staff, paid graduate assistants, student workers, etc.) are Mandatory Reporters and must report to the Title IX Office if the employee experiences, observes, or becomes aware of an incident that meets the following conditions (see University Rule 08.01.01.M1):

- The incident is reasonably believed to be discrimination or harassment.
- The incident is alleged to have been committed by or against a person who, at the time of the incident, was (1) a student enrolled at the University or (2) an employee of the University.

Mandatory Reporters must file a report regardless of how the information comes to their attention – including but not limited to face-to-face conversations, a written class assignment or paper, class discussion, email, text, or social media post. Although Mandatory Reporters must file a report, in most instances, you will be able to control how the report is handled, including whether or not to pursue a formal investigation. The University's goal is to make sure you are aware of the range of options available to you and to ensure access to the resources you need.

Students wishing to discuss concerns in a confidential setting are encouraged to make an appointment with Counseling and Psychological Services (CAPS).

Students can learn more about filing a report, accessing supportive resources, and navigating the Title IX investigation and resolution process on the University's Title IX webpage.

3. **Statement on Mental Health and Wellness**

Texas A&M University recognizes that mental health and wellness are critical factors that influence a student's academic success and overall wellbeing. Students are encouraged to engage in proper self-care by utilizing the resources and services available from Counseling & Psychological Services (CAPS). Students who need someone to talk to can call the TAMU Helpline (979-845-2700) from 4:00 p.m. to 8:00 a.m. weekdays and 24 hours on weekends. 24-hour emergency help is also available through the National Suicide Prevention Hotline (800-273-8255) or at suicidepreventionlifeline.org.

4. **Academic Integrity**

Misconduct in research or scholarship includes fabrication, falsification, or plagiarism in proposing, performing, reviewing, or reporting research. It does not include honest error or honest differences in interpretations or judgments of data.

"Texas A&M University students are responsible for authenticating all work submitted to an instructor. If asked, students must be able to produce proof that the item submitted is indeed the work of that student. Students must keep appropriate records at all times. The inability to authenticate one's work, should the instructor request it, may be sufficient grounds to initiate an academic misconduct case" (Section 20.1.2.3, Student Rule 20).

You can learn more about the Aggie Honor System Office Rules and Procedures, academic integrity, and your rights and responsibilities at aggiehonor.tamu.edu.

"An Aggie does not lie, cheat, or steal, or tolerate those who do."

Upon accepting admission to Texas A&M University, a student immediately assumes a commitment to uphold the Honor Code, to accept responsibility for learning, and to follow the philosophy and rules of the Honor System. Students will be required to state their commitment on examinations, research papers, and other academic work. Ignorance of the rules does not exclude any member of the TAMU community from the requirements or the processes of the Honor System.

5. Absences

The university views class attendance and participation as an individual student responsibility. Students are expected to attend class and to complete all assignments.

Please refer to Student Rule 7 in its entirety for information about excused absences, including definitions, and related documentation and timelines.

In particular, except for absences due to religious obligations, the student must notify his or her instructor in writing (acknowledged e-mail message is acceptable) prior to the date of absence if such notification is feasible. By state law, if a student misses class due to an obligation of his or her religion, the absence is excused. A list of days of religious obligation for the coming semester may be found at http://student-rules.tamu.edu/append4. Note that attendance is critical in this class to keep up with assignments and quizzes. Anyone who has more than five (5) unexcused absences from either or a combination of lectures and labs will be required to meet with Professor Palmer and Department Head, Dr. Lewis to address the unexcused absences. Failure to meet and address the unexcused absences will result in an "F" or failing grade for the class.

6. Disruptive Behavior

If a student's behavior in class is sufficiently disruptive to warrant immediate action, the instructor is entitled to remove a student on an interim basis, pending an informal hearing with the Head of the Department offering the course. This hearing must take place within three working days of the student's removal. This rule and supporting information may be found at http://student-rules.tamu.edu/rule21.

7. Copyright

Richard C. Palmer reserves copyright to all materials used in this course. This means all materials generated for this class, which includes but is not limited to syllabi, exams, lab problems, in-class materials, review sheets, and additional problem sets. Because these materials are copyrighted, you do not have the right to copy or disseminate any material, unless expressly granted by written permission.

8. Defacement of University Property

"It is unlawful for any person to damage or deface any of the buildings, statues, monuments, trees, shrubs, grasses, or flowers on the grounds of any state institutions of higher education (Texas Education Code Section 51.204)" The words damage or deface refer specifically to any and all actions, whether direct or indirect, that either diminish the value or mar the appearance of the physical environment.

9. Plagiarism

It is very important to read other people's work and to use their ideas in developing theses, professional papers, or otherwise completing academic requirements. This is called scholarship and is highly rewarded because it builds a cumulative body of knowledge. When other scholars share their ideas, they expect that others will give them credit when making use of their ideas. It is critically important for students to understand the rules for properly crediting other people's ideas when writing a thesis or professional paper or otherwise completing academic requirements.

If you use someone else's idea without using his or her specific words, this is called paraphrasing. When you paraphrase, you are expected to indicate the source of the idea (the author and publication date, but not a page number). This allows a reader to find the source of the ideas, verify that you have accurately represented them, and obtain additional information about those ideas if necessary.

If you use someone else's exact words, this is called quoting. When you quote, you are expected to enclose the words in quotation marks, and indicate the source of the quote (the author, publication date, and page number).

Plagiarism also applies to information found on the web; it is equally important to cite a web source and the rules above pertain. Consequently, if there are not quotation marks around the text and no source is cited, instructors will assume that you intend for them to conclude that any ideas, especially the specific words, that you presented in your work are your own.

Thus, if the idea or the exact words are taken from another source and you do not indicate the source of the idea, you are representing another person's ideas as if they were your own. This is called plagiarism and is a very serious offense.

All paper submittals need to have a cover sheet with *turnitin.com* report showing a score less than 10%. See the Evans library for more information since it is at no cost for our students.

10. COVID-19

- **Understand and follow ALL University guidelines regarding COVID-19.**
- The most up-to-date COVID-19 guidance regarding campus procedures, testing, reporting and other helpful information can be found on this dedicated site. TAMU updates this site regularly and suggest you bookmark it.

11. Items Specific to this Class

The Service Assignment will consist of 3 Hours of community service with a report written, One Page Double Space Times New Roman on 12 Font. Oral reports of the service assignments will be given, as time allows, within the course of the class. A scoring rubric will be used to delineate consistent criteria for grading on this assignment.

12. Bring Your Own Device (BYOD)

The College of Architecture requires all students to have a personal laptop. This laptop is required to perform classroom activities. You will need your laptop in this course and you are required to bring an operational laptop to class every day. Click here for more information on device requirements for Construction Science majors.

NO RECORDINGS WILL BE MADE AVAILABLE FOR THIS CLASS.

YOU MAY NOT RECORD ANY OF THE LECTURES FOR THIS CLASS. IF WE HAVE ANY SMALL GROUP OR BREAK OUT SESSIONS YOU MAY NOT RECORD THEM. ANY RECORDING OF THE AFOREMENTIONED IS ILLEGAL AND IS CONSIDERED A VIOLATION OF THE AGGIE HONOR CODE AND WILL BE HANDLED IN STRICT COMPLIANCE WITH HONOR CODE SYSTEM.

Texas A&M University is committed to enriching the learning and working environment for all visitors, students, faculty, and staff by promoting a culture that embraces inclusion, diversity, equity, and accountability. Diverse perspectives, talents, and identities are vital to accomplishing our mission and living our core values

QUANTITATIVE LITERACY VALUE RUBRIC

Definition

Quantitative Literacy (QL) – also known as Numeracy or Quantitative Reasoning (QR) – is a "habit of mind," competency, and comfort in working with numerical data. Individuals with strong QL skills possess the ability to reason and solve quantitative problems from a wide array of authentic contexts and everyday life situations. They understand and can create sophisticated arguments supported by quantitative evidence and they can clearly communicate those arguments in a variety of formats (using words, tables, graphs, mathematical equations, etc., as appropriate).

	Capstone (100%)	**Milestones** (75%)	(50%)	(10%)
Representation *Ability to convert relevant information into various mathematical forms (e.g., equations, graphs, diagrams, tables, words)*	Skillfully converts relevant information into an insightful mathematical portrayal in a way that contributes to a further or deeper understanding.	Competently converts relevant information into an appropriate and desired mathematical portrayal.	Completes conversion of information but resulting mathematical portrayal is only partially appropriate or accurate.	Completes conversion of information but resulting mathematical portrayal is inappropriate or inaccurate.
Calculation	Calculations attempted are essentially all successful and sufficiently comprehensive to solve the problem. Calculations are also presented elegantly (clearly, concisely, etc.)	Calculations attempted are essentially all successful and sufficiently comprehensive to solve the problem.	Calculations attempted are either unsuccessful or represent only a portion of the calculations required to comprehensively solve the problem.	Calculations are attempted but are both unsuccessful and are not comprehensive.
Application / Analysis *Ability to make judgments and draw appropriate conclusions based on the quantitative analysis of data, while recognizing the limits of this analysis*	Uses the quantitative analysis of data as the basis for deep and thoughtful judgments, drawing insightful, carefully qualified conclusions from this work.	Uses the quantitative analysis of data as the basis for competent judgments, drawing reasonable and appropriately qualified conclusions from this work.	Uses the quantitative analysis of data as the basis for workmanlike (without inspiration or nuance, ordinary) judgments, drawing plausible conclusions from this work.	Uses the quantitative analysis of data as the basis for tentative, basic judgments, although is hesitant or uncertain about drawing conclusions from this work.

This rubric was created using the Association of American Colleges and Universities (AAC&U) Quantitative Literacy VALUE Rubric. Retrieved from https://www.aacu.org/value-rubrics