

Instructor Observed: <i>LTC BELANGER</i>	Observing Faculty: <i>LTC COWART</i>
Time: <i>0950 (CID1 HOUR)</i>	Course/Subject: <i>CH101 - LEWIS STRUCTURES (60114)</i>
Date: <i>21 SEP 2022</i>	Number of Cadets: <i>17 PRESENT</i>
Students Were: <ul style="list-style-type: none"> <input checked="" type="checkbox"/> Working independently at their desks <input type="checkbox"/> Working in small, cooperative groups <input type="checkbox"/> Making a presentation <input type="checkbox"/> Listening to a lecture <input type="checkbox"/> Viewing a film <input checked="" type="checkbox"/> Taking a test (POP QUIZ) (15 MIN) <input checked="" type="checkbox"/> Other: <i>BOARD WORK</i> 	
Instructor was: <ul style="list-style-type: none"> <input checked="" type="checkbox"/> Lecturing <input checked="" type="checkbox"/> Facilitating a question-and-answer sequence <i>Questions from previous lessons.</i> <input checked="" type="checkbox"/> Demonstrating a concept (<i>STEPS TO CONSTRUCT LEWIS STRUCTURES</i>) <input checked="" type="checkbox"/> Introducing a new concept <input type="checkbox"/> Reviewing for a test <input checked="" type="checkbox"/> Other: <i>POP QUIZ (15 MIN)</i> 	
Assessment: Technical Mastery (0-3): <i>3 → nice job answering cadet questions.</i> Presentation Style (0-3): <i>3 → nice use of multiple boards. Good movement around room.</i> Classroom Decorum and Control (0-3): <i>3 Great support of cadets.</i>	
Comments: <ul style="list-style-type: none"> - <u>Excellent</u> rapport with your cadets; they genuinely seem to be glad to show up to class. - Nice music to enter class with! - Good overview of calendar and admin notes. - Excellent intro about ANFO explosion. - Nice job stating of questions - Very good pop quiz → works <u>SEVERAL</u> PREVIOUS LESSON OBJECTIVES <ul style="list-style-type: none"> - 1 CDT complete @ 10 min ~ 5 more complete BEFORE 15 min. - I like the 7/5 possibility. 	
Received by:	Date:

Addition Questions and Prompts for Discussion:

- ☒ Did the instructor state the learning objectives?
- ☒ Did the instructor provide context (show a link between the students' past experiences and the current objectives)? *ANFO example*
- ☐ What activities were used to present information or teach skills? Examples include lecturing, modeling demos, etc. *LEWIS STRUCTURES*
- ☐ What learning modes were used by the cadets during this lesson? Examples include reading, listening, asking questions, solving problems, etc. *BOARD WORK*
- ☒ Did the activities cover a range of learning modes?
- ☒ Did the instructor assess learning during the lesson, either formally or informally? *BOARDS*
- ☐ If so, did the instructor adjust teaching style as a result? *POP QUIZ*
- ☒ Did the instructor use any guided practice activities to practice the new skills or apply the new concepts? *BOARD WORK*
- ☒ Were there any assignments for this lesson that allow the cadets to practice the skills or apply the new concepts from the lesson on their own? *ONLINE / DEFINITIONS*
- ☒ Were the cadets paying attention? If not, what methods were employed to ensure cadets pay attention and apply effort? *(H₂ balloon helps)*
- ☐ Were the cadets well-behaved? If not, how did the instructor respond?

→ SOME MINOR DISRUPTIONS.

Note: The questions in this section are meant to be discussion prompts and not requirements or to form the basis of a cut scale.

- * 1 CDT LEFT ROOM IMMEDIATELY AFTER THE REPORT? (BAL INTO HALL)*
- CDT Bearing. (one disruptive cadet.) BACK ROW, MIDDLE DESK.*
- SECTION MARKER DOING THEIR JOB ✓*
- 40 min from start of class to discussion of the lesson: LO's.*

Instructor Observed: Dr. Andrew Biaglow	Observing Faculty: Dr. Simuck F. Yuk
Time: 08:45:00 to 09:40:00 at 09/23/22	Course/Subject: CH365 Chemical Engineering Thermodynamics
Date: 09/23/22	Number of Cadets: 8
Students Were: <ul style="list-style-type: none"> <input type="checkbox"/> Working independently at their desks <input type="checkbox"/> Working in small, cooperative groups <input type="checkbox"/> Making a presentation <input type="checkbox"/> Listening to a lecture <input type="checkbox"/> Viewing a film <input type="checkbox"/> Taking a test <input type="checkbox"/> Other: 	
Instructor was: <ul style="list-style-type: none"> <input type="checkbox"/> Lecturing <input type="checkbox"/> Facilitating a question-and-answer sequence <input type="checkbox"/> Demonstrating a concept <input type="checkbox"/> Introducing a new concept <input type="checkbox"/> Reviewing for a test <input type="checkbox"/> Other: 	
Assessment: Technical Mastery (0-3): 3 Presentation Style (0-3): 3 Classroom Decorum and Control (0-3): 3	
Comments: <ol style="list-style-type: none"> 1) Good admin on the class progress. 2) Good engagement with cadets at the beginning of the class. 3) Good emphasis on the Carnot cycle and the derivation of entropy. 4) Good connection with CH101 on the concepts of intermolecular force (and kinetic molecular theory) and its effects on the real gas. 5) Good summary of the contents covered up to Lsn 15. 6) Good use of classroom technologies, including the AverTouch camera and projector. 7) Good interaction with cadets, answering conceptual and computational questions. 8) Cadets are well behaved in the class, engaging actively with the instructor. 	
Received by:	Date: 09/23/22

Addition Questions and Prompts for Discussion:

- ☐ Did the instructor state the learning objectives?
- ☐ Did the instructor provide context (show a link between the students' past experiences and the current objectives)?
- ☐ What activities were used to present information or teach skills? Examples include lecturing, modeling, demos, etc.
- ☐ What learning modes were used by the cadets during this lesson? Examples include reading, listening, asking questions, solving problems, etc.
- ☐ Did the activities cover a range of learning modes?
- ☐ Did the instructor assess learning during the lesson, either formally or informally?
- ☐ If so, did the instructor adjust teaching style as a result?
- ☐ Did the instructor use any guided practice activities to practice the new skills or apply the new concepts?
- ☐ Were there any assignments for this lesson that allow the cadets to practice the skills or apply the new concepts from the lesson on their own?
- ☐ Were the cadets paying attention? If not, what methods were employed to ensure cadets pay attention and apply effort?
- ☐ Were the cadets well-behaved? If not, how did the instructor respond?

Note: The questions in this section are meant to be discussion prompts and not requirements or to form the basis of a cut scale.

Instructor Observed: Pat Bowers	Observing Faculty: Dr. Biaglow
Time: 1035-1150	Course/Subject: CH102 General Chemistry
Date: 22 September 2022	Number of Cadets: 17
Students Were: <ul style="list-style-type: none"> <input type="checkbox"/> Working independently at their desks <input checked="" type="checkbox"/> Working in small, cooperative groups <input type="checkbox"/> Making a presentation <input checked="" type="checkbox"/> Listening to a lecture <input checked="" type="checkbox"/> Viewing a film <input type="checkbox"/> Taking a test <input type="checkbox"/> Other: 	
Instructor was: <ul style="list-style-type: none"> <input checked="" type="checkbox"/> Lecturing <input checked="" type="checkbox"/> Facilitating a question-and-answer sequence <input checked="" type="checkbox"/> Demonstrating a concept <input checked="" type="checkbox"/> Introducing a new concept <input type="checkbox"/> Reviewing for a test <input type="checkbox"/> Other: 	
Comments: <p>General Comments: Class was well-organized, and cadets paid attention throughout the 75-minutes. Cadet Preston likes to sit on the desk. I don't like when they do that, and I will correct them. Cadets asked questions and were attentive and respectful, so your classroom management is excellent.</p> <p>Gummy Demo: The Gummy demo actor's name could be "Bearison Ford" instead of Harrison Ford. This demo is interesting. You did not say what the white powder was or what was in the gas bubbles. Also, the gas bubbles were difficult to see. I recommend putting this onto the document camera and projecting it onto the screen, with a really close zoom in on the tube, so everyone can see the action. You can then run the video in slow motion to try to see the details of the reaction. You could also lower the gummy in on a thread to kind of mock the movie. You already set that up with the movie clip.</p> <p>Comments continued on back.</p>	
Received by:	Date: 23 September 2023

Addition Questions and Prompts for Discussion:

- ☐ Did the instructor state the learning objectives?
- ☐ Did the instructor provide context (show a link between the students' past experiences and the current objectives)?
- ☐ What activities were used to present information or teach skills? Examples include lecturing, modeling, demos, etc.
- ☐ What learning modes were used by the cadets during this lesson? Examples include reading, listening, asking questions, solving problems, etc.
- ☐ Did the activities cover a range of learning modes?
- ☐ Did the instructor assess learning during the lesson, either formally or informally? If so, did the instructor adjust teaching style as a result?
- ☐ Did the instructor use any guided practice activities to practice the new skills or apply the new concepts?
- ☐ Were there any assignments for this lesson that allow the cadets to practice the skills or apply the new concepts from the lesson on their own?
- ☐ Were the cadets paying attention? If not, what methods were employed to ensure cadets pay attention and apply effort?
- ☐ Were the cadets well-behaved? If not, how did the instructor respond?

Note: The questions in this section are meant to be discussion prompts and not requirements or to form the basis of a cut scale.

Additional Comments:

Gelatin is a major component of gummies, and it is disgusting. But disgusting things are sometimes fun to show in class because the cadets will remember it. It is made from cartilage, bones, hooves, and skin from slaughtered pigs. There are videos of gelatin processing online. The chemical formula of $C_{102}H_{151}N_{31}O_{39}$, and this is going to give a different molar mass than the 330.26 g/mol you quoted. Sucrose is the other component, mainly coming from corn syrup, and the gummy also contains starch, water, dextrose, and sorbitol. The reaction itself left a residue and made smoke, all of which point to perhaps incomplete combustion. The nutritional label also has information. An also the metabolism of the gummy in the human body also leads to the CO_2 and H_2O in your breath, as well as accumulation of fat and muscle tissue. My point in all this is that there is good science happening here is we slow down and look at it. Similar comments on the methanol cannon. We all heard the bang, but did not explore what you put in the jug or discuss the spark and what that did.

Instructor Observed: MAJ Jeffrey Chin	Observing Faculty: Dr. Simuck F. Yuk
Time: 07:40:00 to 09:40:00 at 09/19/22	Course/Subject: CH101 General Chemistry I
Date: 09/19/22	Number of Cadets: 18
Students Were: <ul style="list-style-type: none"> <input checked="" type="checkbox"/> Working independently at their desks <input type="checkbox"/> Working in small, cooperative groups <input type="checkbox"/> Making a presentation <input checked="" type="checkbox"/> Listening to a lecture <input checked="" type="checkbox"/> Viewing a film <input type="checkbox"/> Taking a test <input type="checkbox"/> Other: 	
Instructor was: <ul style="list-style-type: none"> <input checked="" type="checkbox"/> Lecturing <input checked="" type="checkbox"/> Facilitating a question-and-answer sequence <input checked="" type="checkbox"/> Demonstrating a concept <input checked="" type="checkbox"/> Introducing a new concept <input type="checkbox"/> Reviewing for a test <input type="checkbox"/> Other: 	
Assessment: Technical Mastery (0-3): 3 Presentation Style (0-3): 3 Classroom Decorum and Control (0-3): 3	
Comments: <ol style="list-style-type: none"> 1) Good admin on the class progress. 2) Good engagement with cadets at the beginning of the class. 3) Good introduction of CH102. 4) Good demonstration of combustion reactions by “gummy bear” experiment. <ol style="list-style-type: none"> a. All the safety procedures were carefully followed. 5) Good board work questions used to facilitate the cadet’s fundamental understandings on stoichiometry and combustion reaction itself. 6) A series of video were used to visually present the mechanisms and examples of combustion reaction. 	
Received by:	Date: 09/19/22

Addition Questions and Prompts for Discussion:

- ☐ Did the instructor state the learning objectives?
- ☐ Did the instructor provide context (show a link between the students' past experiences and the current objectives)?
- ☐ What activities were used to present information or teach skills? Examples include lecturing, modeling, demos, etc.
- ☐ What learning modes were used by the cadets during this lesson? Examples include reading, listening, asking questions, solving problems, etc.
- ☐ Did the activities cover a range of learning modes?
- ☐ Did the instructor assess learning during the lesson, either formally or informally?
- ☐ If so, did the instructor adjust teaching style as a result?
- ☐ Did the instructor use any guided practice activities to practice the new skills or apply the new concepts?
- ☐ Were there any assignments for this lesson that allow the cadets to practice the skills or apply the new concepts from the lesson on their own?
- ☐ Were the cadets paying attention? If not, what methods were employed to ensure cadets pay attention and apply effort?
- ☐ Were the cadets well-behaved? If not, how did the instructor respond?

Note: The questions in this section are meant to be discussion prompts and not requirements or to form the basis of a cut scale.

Instructor Observed: Lachance	Observing Faculty: Biaglow
Time: 1035-~1150	Course/Subject: CH363 Separation Processes
Date: 20 September 2022	Number of Cadets: 10
Students Were: <ul style="list-style-type: none"> <input type="checkbox"/> Working independently at their desks <input type="checkbox"/> Working in small, cooperative groups <input type="checkbox"/> Making a presentation <input checked="" type="checkbox"/> Listening to a lecture <input type="checkbox"/> Viewing a film <input type="checkbox"/> Taking a test <input checked="" type="checkbox"/> Other: Reviewing for WPR 	
Instructor was: <ul style="list-style-type: none"> <input checked="" type="checkbox"/> Lecturing <input checked="" type="checkbox"/> Facilitating a question-and-answer sequence <input type="checkbox"/> Demonstrating a concept <input type="checkbox"/> Introducing a new concept <input checked="" type="checkbox"/> Reviewing for a test <input type="checkbox"/> Other: 	
Assessment: Technical Mastery (0-3): 3 Presentation Style (0-3): 3 Classroom Decorum and Control (0-3): 3+	
Comments: Comments are attached.	
Received by: LACHANCE.RUSSELL L.PHILIP.1012421113	Digitally signed by LACHANCE.RUSSELL.PHILIP.10 12421113 Date: 2022.09.22 13:19:46 -04'00'
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Addition Questions and Prompts for Discussion:

- ☐ Did the instructor state the learning objectives? *I can't remember, but I don't think so.*
- ☒ Did the instructor provide context (show a link between the students' past experiences and the current objectives)? *Yes, concepts were related back to chapter 4.*
- ☒ What activities were used to present information or teach skills? Examples include lecturing, modeling, demos, etc. *Activities include review Q&A and working on problems as a group.*
- ☒ What learning modes were used by the cadets during this lesson? Examples include reading, listening, asking questions, solving problems, etc. *Listening and participating in discussion.*
- ☒ Did the activities cover a range of learning modes? *Yes, I think so. Cadets seemed engaged.*
- ☐ Did the instructor assess learning during the lesson, either formally or informally? *No.*
- ☐ If so, did the instructor adjust teaching style as a result? *N/A*
- ☐ Did the instructor use any guided practice activities to practice the new skills or apply the new concepts? *Yes, cadets worked on ternary phase diagram together.*
- ☐ Were there any assignments for this lesson that allow the cadets to practice the skills or apply the new concepts from the lesson on their own? *Not observed.*
- ☒ Were the cadets paying attention? If not, what methods were employed to ensure cadets pay attention and apply effort? *Lots of wake-up calls and periodic applause for good answers.*
- ☒ Were the cadets well-behaved? If not, how did the instructor respond?
Very much so. The cadets were highly engaged, all cadets participated in class, even when they were unsure of their responses. They seem to really like Dr. Lachance.

Note: The questions in this section are meant to be discussion prompts and not requirements or to form the basis of a cut scale.

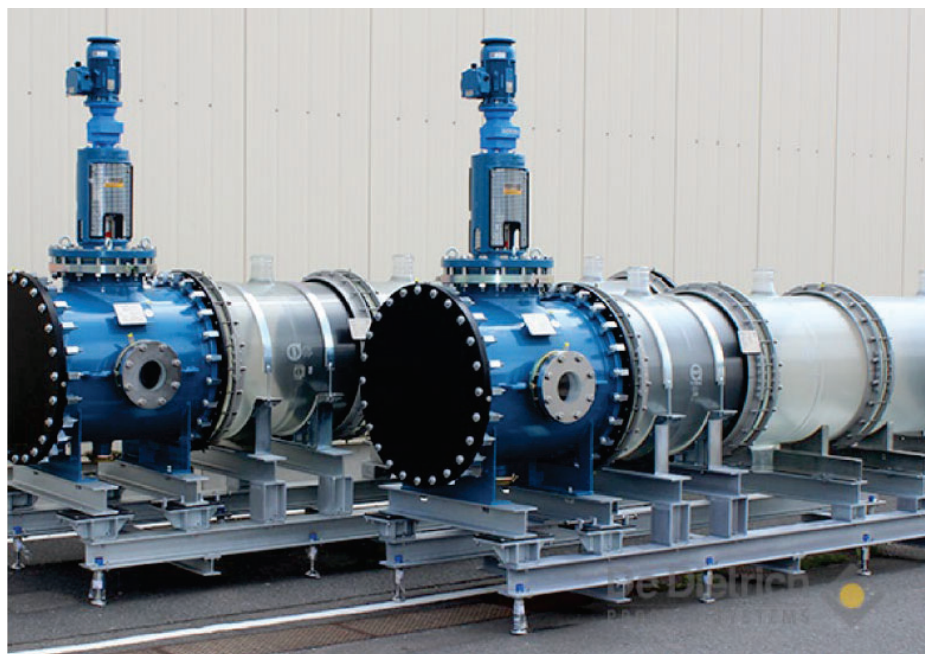
Additional comments follow in the attachment.

Russ,

Thanks for letting me observe your class yesterday. Here are some thoughts on this lesson.

1. You have a great relationship with the cadets and a great presence in the classroom and the cadets really seem to like you and want to follow you.

2. Give cadets a physical picture of extraction. Your book has an excellent description of mixer-settlers and how to design them. Here is a picture I pulled down from google (search mixer settler):



<https://www.ddpsinc.com/blog/mixer-settlers-a-top-choice-for-liquid-liquid-extraction-processes>

I think this kind of picture helps cadets understand what they are doing.

3. Explain why they are doing this. For example, they are trying to rinse a solute from one stream to another. Maybe they have something like ethanol in water and want to move the ethanol into a solution with a lower heat of vaporization so it would be cheaper to distill.

4. A little more explanation is needed on the concept of approach to equilibrium. A batch extraction process (mixing followed by settling followed by decanting) would require a certain amount of time to reach equilibrium. A flow process is the same except we talk about residence time instead of time.

5. A simple demonstration would help. In general chemistry, we used to drop iodine crystals into water and hexane. The purple and brown colors of the hexane and water phases suggest iodine is distributing between the two phases. The equilibrium $\text{Iodine(aqueous)} \rightleftharpoons \text{Iodine(organic)}$ suggests a distribution coefficient if you write an equilibrium expression for this "reaction." That is, mass ratio of products over mass ratio of reactants or mole fraction of products over mole fraction of reactants.

6. As you suggested, use the distillation tower demo unit. Abhilash can help you move this.

Andy

Instructor Observed: CPT Lowell	Observing Faculty: Dr. Nagelli
Time: 0740 (A1B1 hours)	Course/Subject: CH101
Date: 19SEP22	Number of Cadets: 16 Present
Students Were: <ul style="list-style-type: none"> <input type="checkbox"/> Working independently at their desks <input type="checkbox"/> Working in small, cooperative groups <input type="checkbox"/> Making a presentation <input checked="" type="checkbox"/> Listening to a lecture <input type="checkbox"/> Viewing a film <input type="checkbox"/> Taking a test <input checked="" type="checkbox"/> Other: Good mix of instructor demonstrated board problems, cadets taking boards in individually, and demo to set the stage for what combustion is 	
Instructor was: <ul style="list-style-type: none"> <input checked="" type="checkbox"/> Lecturing <input checked="" type="checkbox"/> Facilitating a question-and-answer sequence <input checked="" type="checkbox"/> Demonstrating a concept <input type="checkbox"/> Introducing a new concept <input type="checkbox"/> Reviewing for a test <input type="checkbox"/> Other: 	
Assessment: Technical Mastery (0-3): 3 Presentation Style (0-3): 3 Classroom Decorum and Control (0-3): 3	
Comments: <ol style="list-style-type: none"> 1. Great job enforcing the section march duties of uniform check and standards for classroom 2. Good job addressing cadets optional exercise question from mastering and previewing the importance of shape/polarity upcoming in LSN17 3. Mole bridge slide was awesome! <ol style="list-style-type: none"> a. Recommend adding units to every bridge with text box under each bridge 4. For combustion of glucose model, give space for reaction to clearly show the state symbols 5. The gummy bear demo execution was good <ol style="list-style-type: none"> a. Recommend while youre proceeding with every step, to draw from cadets on making observations and predictions <ol style="list-style-type: none"> 1. Why KClO3? Why am I adding this first? 2. Why is there a color change? Connect with Electromagnetic spect lesson 3. Whats the smoke made up of? 4. Let them connect with how the human body breaks down sugars 	

6. Recommend when demonstrating $\text{Cr}(\text{NO}_3)_3$ molecular mass calculation on the board, finish with a dimensional analysis to show how amu clearly equates to grams/mole
 - a. Same applies for Mass % of N in compound: in the formula for mass of element/mass of compound – cancel moles by dimensional analysis so have units in grams in both numerator and denominator to have a mass percentage
 - b. Great job emphasizing connection with amu and g/mole! And with the emphasis on how to determine significant figures
7. For problem 4.85, I like that you assigned different compounds to groups of cadets
 - a. Good job navigating the boards and spotting any corrections to make
 - b. CDT O who briefed his board on Ammonia did not have his answer double underlined
 - c. Good job emphasizing how we track sig figs by using CDT Looney's (not sure his exact name – yearling who briefed his board last) as example
8. AWESOME plug with how hydrocarbons impact daily life! Daily life = ChemE
9. I liked that you used Problem 107 as a instructor demonstrated problem
 - a. Recommend as you set the problem up that the goal of this problem is to determine the amount of gases in moles we are producing as products using the masses that were measured or determined...from these moles we can determine the moles of the reactants we started with
 - b. Recommend emphasizing that "C" and "H" are unique in CO_2 and H_2O respectively...because of the conservation of mass we can determine the identity or empirical formula of fuel or hydrocarbon
 - c. Good job drawing from cadets to help you step by step as you set the problem up!
 - d. Recommend when working the problem – project your mole bridge slide to help cadets as they navigate
 - e. Love the mole bridge plan you set up for the cadets!
 - f. Great work navigating cadet boards!
 - g. Very good emphasizing the lowest number of moles and divide each by lowest number to obtain empirical formula

Received by:

NAGELLI.ENOCH.A
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Date: 19SEP22

Addition Questions and Prompts for Discussion:

- X Did the instructor state the learning objectives?
- X Did the instructor provide context (show a link between the students' past experiences and the current objectives)?
- X What activities were used to present information or teach skills? Examples include lecturing, modeling, demos, etc. **Gummy Bear Demo and connected importance of mole bridge**
 - ☐ What learning modes were used by the cadets during this lesson? Examples include reading, listening, asking questions, solving problems, etc.
 - ☐ Did the activities cover a range of learning modes?
 - ☐ Did the instructor assess learning during the lesson, either formally or informally?
 - ☐ If so, did the instructor adjust teaching style as a result?
 - ☐ Did the instructor use any guided practice activities to practice the new skills or apply the new concepts?
- X Were there any assignments for this lesson that allow the cadets to practice the skills or apply the new concepts from the lesson on their own? **Individual cadet boards were used to assess/practice/apply lesson objectives**
- X Were the cadets paying attention? If not, what methods were employed to ensure cadets pay attention and apply effort? **Class was engaged with CPT Lowell delivery of material and classroom presence throughout the lesson duration**
 - ☐ Were the cadets well-behaved? If not, how did the instructor respond?

Note: The questions in this section are meant to be discussion prompts and not requirements or to form the basis of a cut scale.

Good mixture of discussion, instructor demonstrated problems, individual board problems for cadets, and experiment demo to hit on learning objectives for lesson! Please refer to the above notes and observations in the comments section with more detail feedback of the lesson.

Instructor Observed: MAJ Mandes	Observing Faculty: Dr. Nagelli
Time: A1B1 (0740-0940)	Course/Subject: CH101
Date: 29SEP22	Number of Cadets: 18 present
Students Were: <ul style="list-style-type: none"> <input checked="" type="checkbox"/> Working independently at their desks <input checked="" type="checkbox"/> Working in small, cooperative groups <input type="checkbox"/> Making a presentation <input checked="" type="checkbox"/> Listening to a lecture <input type="checkbox"/> Viewing a film <input type="checkbox"/> Taking a test <input checked="" type="checkbox"/> Other: Cadets took an instructor quiz 	
Instructor was: <ul style="list-style-type: none"> <input checked="" type="checkbox"/> Lecturing <input checked="" type="checkbox"/> Facilitating a question-and-answer sequence <input checked="" type="checkbox"/> Demonstrating a concept (as part of the LAB3 IMFs Demo for cadets to complete lab report in groups 24 hours after lab) <input type="checkbox"/> Introducing a new concept <input type="checkbox"/> Reviewing for a test <input type="checkbox"/> Other: 	
Assessment: Technical Mastery (0-3): 3 Presentation Style (0-3): 3 Classroom Decorum and Control (0-3): 3	
Comments: <ol style="list-style-type: none"> 1. Recommend updating CH101 course schedule in the visitor's book with day one schedule and AY23-1. 2. Good rapport with cadets in the classroom and engaging cadets as they come in 3. SUSTAIN on the homework check for every cadet in class and for collecting problem 5.65 – like the accountability for coming prepared to class! 4. During Instructor Quiz, I recommend making cadets clear their desks to avoid any conflicts with the authorized references for the quiz (i.e.. some cadets have RDC bound together with their textbook so flipping between pages between RDC and easily can go to book) <ol style="list-style-type: none"> a. Accepted CLS command is "Clear and Stagger" which you can build into a routine and expectation for any graded event b. Recommend sending out anonymous poll to cadets to see if all are ok with music playing during graded event to ensure it isn't disruptive for any cadets while they complete the graded event (not sure if it will be but just a thought) c. Recommend passing out notebooks back after quiz is complete; perhaps you can distribute as quizzes are retrieved to save time 	

- d. Great job going over the quiz! Sending cadets to the board is good strategy to emphasize applying the material
 - i. Sustain on emphasis of importance of the expanded octet; recommend explicitly calculating the formal charge of Sulfur as you fill octet for oxygen and minimizing formal charge and explicitly counting the electrons on sulfur (time permitting – I noticed in the class that some of cadets were not sure)
- 5. SUSTAIN: Having a cadet do an introduction about themselves to the class! Builds good rapport for class!
- 6. For Demo (IMF Lab which is now in class demo):
 - a. Recommend using eye protection and gloves to demonstrate to cadets the safety precaution of handling chemicals (SDS for each). Specifically, I would check SDS for ethyl acetate to demonstrate the importance of safely handling toxic chemicals.
 - b. Recommend using a funnel to pour solvents into test tubes to demonstrate to cadets.
 - c. It was hard from the back to verify what was occurring in each test tube – perhaps you can use the Elmo to project video feed as you mix or add to help cadets make observations or have the class approach instructor bench but maintaining a distance since all do not have eye pro
 - i. Perhaps you can list either on the board or project a slide that has a breakdown of what was added into each Test Tube since the cadets will have to complete a lab report
- 7. Very good discussion of using Formaldehyde as an example to pull from the cadets on the IMFs present
 - a. Sustain: calling on cadets to discuss the different types of IMFs
- 8. The discussion on “like dissolves like” can always come back down to strength of IMFs (or degree of IMFs – weak to strong) between molecules governing physical phenomena
- 9. Board problem 11.35
 - a. Liked that cadets are paired up together at boards; there was good discussion amongst groups as they solve the problem
 - b. Recommend that cadets are consistent with board format from group to group
 - c. Liked that you navigated the boards to check in on each group for their work on the board to be correct
 - i. Note: there were cadets waiting at their boards for your confirmation to move on to next problem
 - ii. Can always use “Cease work, chalk down” to ensure cadets stop and give you full attention
 - iii. Recommend when you have a common trend of mistakes or questions from cadet groups to “cease work” and make a global comment addressing
 - 1. Discussion with individual groups – the same questions individual groups have could be addressed as general comments and answers to the rest of the class

Class Ends 0856

Received by:

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OMAS.1298945980

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45980
Date: 2022.09.29 16:06:44 -04'00'

Date: 29SEP22

Addition Questions and Prompts for Discussion:

- ☐ Did the instructor state the learning objectives?
- X Did the instructor provide context (show a link between the students' past experiences and the current objectives)?
- X What activities were used to present information or teach skills? Examples include lecturing, modeling, demos, etc. (Used
- X What learning modes were used by the cadets during this lesson? Examples include reading, listening, asking questions, solving problems, etc.
- ☐ Did the activities cover a range of learning modes?
- ☒ Did the instructor assess learning during the lesson, either formally or informally? **Yes, Maj Mandes used homework check on all cadets, collected a problem from after class work from previous lesson, instructor quiz on previous lesson content, and board problems.**
- ☐ If so, did the instructor adjust teaching style as a result?
- ☐ Did the instructor use any guided practice activities to practice the new skills or apply the new concepts?
- ☐ Were there any assignments for this lesson that allow the cadets to practice the skills or apply the new concepts from the lesson on their own?
- ☐ Were the cadets paying attention? If not, what methods were employed to ensure cadets pay attention and apply effort? **Yes**
- ☐ Were the cadets well-behaved? If not, how did the instructor respond? **Yes**

Note: The questions in this section are meant to be discussion prompts and not requirements or to form the basis of a cut scale.

Overall, good command of the classroom and presence in the classroom. The atmosphere for learning established with the cadets was obvious and a can help drive interest in the lesson concent.

Instructor Observed: Dr. Enoch Nagelli	Observing Faculty: LTC John Belanger
Time: 0950-1150 (C1D1)	Course/Subject: CH459 Chemical Engineering Laboratory
Date: 5 OCT 2022	Number of Cadets: 8
Students Were: <ul style="list-style-type: none"> <input type="checkbox"/> Working independently at their desks <input checked="" type="checkbox"/> Working in small, cooperative groups <input type="checkbox"/> Making a presentation <input type="checkbox"/> Listening to a lecture <input type="checkbox"/> Viewing a film <input type="checkbox"/> Taking a test <input type="checkbox"/> Other: 	
Instructor was: <ul style="list-style-type: none"> <input type="checkbox"/> Lecturing <input checked="" type="checkbox"/> Facilitating a question-and-answer sequence <input type="checkbox"/> Demonstrating a concept <input type="checkbox"/> Introducing a new concept <input type="checkbox"/> Reviewing for a test <input type="checkbox"/> Other: 	
Assessment: Technical Mastery (0-3): 3 Answered questions covering a range of topics Presentation Style (0-3): 3 Clear explanations, good handwriting/drawing at whiteboard Classroom Decorum and Control (0-3): 3 No issues	
Comments: Dr. Nagelli answered questions about process control, modelling in CHEMCAD, and mass balances with clarity and obvious technical mastery. He used a mix of teaching styles that included verbal discussions, writing/drawing diagrams and equations on the whiteboard, and going through a CHEMCAD setup on a computer. Cadets were actively engaged in their group projects, and it was clear that each cadet was contributing and there were no loafers, which can be an issue with group work. Individuals were asking questions and getting great instruction and feedback.	
Received by: NAGELLI.ENOCH.A .1523357600 <div style="font-size: small; margin-top: 5px;"> Digitally signed by NAGELLI.ENOCH.A.1523357600 Date: 2022.10.14 15:27:53 -04'00' </div>	Date: 5 OCT 2022

Addition Questions and Prompts for Discussion:

- ☐ Did the instructor state the learning objectives? **During previous lessons and posted online**
- ☐ Did the instructor provide context (show a link between the students' past experiences and the current objectives)? **Great connection with previous lessons and other courses.**
- ☐ What activities were used to present information or teach skills? Examples include lecturing, modeling, demos, etc. **Tailored, one-on-one Q&A sessions using a variety of approaches.**
- ☐ What learning modes were used by the cadets during this lesson? Examples include reading, listening, asking questions, solving problems, etc. **Reading, Listening, Problem-Solving.**
- ☐ Did the activities cover a range of learning modes? **Yes, a variety of modalities used.**
- ☐ Did the instructor assess learning during the lesson, either formally or informally? **Informally**
- ☐ If so, did the instructor adjust teaching style as a result? **Feedback tailored to individuals.**
- ☐ Did the instructor use any guided practice activities to practice the new skills or apply the new concepts? **Lab report preparation served as a guided practice activity for all cadets.**
- ☐ Were there any assignments for this lesson that allow the cadets to practice the skills or apply the new concepts from the lesson on their own? **Yes, individual contributions to lab reports.**
- ☐ Were the cadets paying attention? If not, what methods were employed to ensure cadets pay attention and apply effort? **Yes, all cadets were actively engaged.**
- ☐ Were the cadets well-behaved? If not, how did the instructor respond? **Yes, no issues.**

Note: The questions in this section are meant to be discussion prompts and not requirements or to form the basis of a cut scale.

Connected a cadet's question to a discussion during a previous lesson.

Good job pushing back on a cadet saying that they didn't remember material from almost 3 years ago in CH102. "What about discussing this five lessons ago?" The interaction was polite and positive, but also assertive and reminded the cadet that they need to incorporate previous learning into the current project.

I recommend keeping the door between the write-up room and the lab closed unless there are humidity/heat issues. This discourages any cadet from quickly "popping in" to the lab for a quick check on equipment without wearing personal protective equipment (PPE). With the door open, there can be a temptation to do this and then there can be safety violations and needed corrections.

Great class! The lab looks good (BUT the south stone wall needs to have the water/erosion issue fixed).

Instructor Observed: MAJ Yi	Observing Faculty: LTC COWART
Time: 0740	Course/Subject: CH102 - ACID / BASES (LSN 11)
Date: 21 SEP 2022	Number of Cadets: 12
Students Were: <ul style="list-style-type: none"> <input checked="" type="checkbox"/> Working independently at their desks <input type="checkbox"/> Working in small, cooperative groups <input type="checkbox"/> Making a presentation <input checked="" type="checkbox"/> Listening to a lecture <input type="checkbox"/> Viewing a film <input type="checkbox"/> Taking a test <input type="checkbox"/> Other: 	
Instructor was: <ul style="list-style-type: none"> <input checked="" type="checkbox"/> Lecturing <input checked="" type="checkbox"/> Facilitating a question-and-answer sequence <input checked="" type="checkbox"/> Demonstrating a concept (which concept?) <input checked="" type="checkbox"/> Introducing a new concept <input type="checkbox"/> Reviewing for a test <input checked="" type="checkbox"/> Other: → Reviewing the next lab. 	
Assessment: Technical Mastery (0-3): Presentation Style (0-3): Classroom Decorum and Control (0-3):	
Comments: <ul style="list-style-type: none"> - Good discussion of lab question from cadet at start of class. - Good overall description of the lesson and important links to what they have already learned. - Good discussion of <u>why</u> we use pH / pOH as values to talk about acids/bases. - Good job <u>making</u> them look at the RDC. - Command: "TAKE BOARDS" - Overall, great job. 	
Received by:	Date:

Addition Questions and Prompts for Discussion:

- ☒ Did the instructor state the learning objectives? (showed on slide)
- ☒ Did the instructor provide context (show a link between the students' past experiences and the current objectives)?
- ☐ What activities were used to present information or teach skills? Examples include lecturing, modeling, emos etc. Board work.
- ☐ What learning modes were used by the cadets during this lesson? Examples include reading, listening, asking questions, solving problems, etc. AT BOARDS
- ☒ Did the activities cover a range of learning modes?
- ☐ Did the instructor assess learning during the lesson, either formally or informally? PERIODIC QUESTIONING
- ☐ If so, did the instructor adjust teaching style as a result? BOARDS
- ☒ Did the instructor use any guided practice activities to practice the new skills or apply the new concepts? BOARDS
- ☒ Were there any assignments for this lesson that allow the cadets to practice the skills or apply the new concepts from the lesson on their own? BOARD PROBLEMS
- ☐ Were the cadets paying attention? If not, what methods were employed to ensure cadets pay attention and apply effort? YES, BUT SEVERAL WERE PRETTY SLEEPY.
- ☐ Were the cadets well-behaved? If not, how did the instructor respond? YES.

Note: The questions in this section are meant to be discussion prompts and not requirements or to form the basis of a cut scale.

- Good preview of the upcoming lab and what concepts from this lesson apply.
- Good discussion, but starting to lose the cadets before getting to the learning objectives.
- Quite a bit of cadets leaving classroom \rightarrow get them engaged.
 \rightarrow consider asking specific cadets questions during the discussion \rightarrow keeps them awake.
- Good application of pH to blood. \rightarrow what happens when pH is not correct. \rightarrow good practical applications.
- DEMO? \rightarrow TIED TO WHICH LO?

LOs: Explain autoionization of H_2O
Calculate pH pOH K_w $[H_3O^+]$ $[OH^-]$
Determine pH $[H_3O^+]$ K_a pOH $[OH^-]$ K_b } Mostly calculations-based.

Instructor Observed: <i>Dr. Yuk</i>	Observing Faculty: <i>LTC Cowart</i>
Time: <i>0740 - 0855</i>	Course/Subject: <i>CH350 (LSH 11) RECOMBINANT DNA PROTEIN EXPRESSION</i>
Date: <i>22 SEP 2022</i>	Number of Cadets: <i>10</i>
Students Were: <ul style="list-style-type: none"> <input checked="" type="checkbox"/> Working independently at their desks <input type="checkbox"/> Working in small, cooperative groups <input type="checkbox"/> Making a presentation <input checked="" type="checkbox"/> Listening to a lecture <input type="checkbox"/> Viewing a film <input checked="" type="checkbox"/> Taking a test - <i>Instructor quiz</i> <input type="checkbox"/> Other: 	
Instructor was: <ul style="list-style-type: none"> <input checked="" type="checkbox"/> Lecturing <input type="checkbox"/> Facilitating a question-and-answer sequence <input type="checkbox"/> Demonstrating a concept <input checked="" type="checkbox"/> Introducing a new concept <input type="checkbox"/> Reviewing for a test <input type="checkbox"/> Other: 	
Assessment: Technical Mastery (0-3): <i>Excellent</i> Presentation Style (0-3): <i>Easy to follow and understood → great!</i> Classroom Decorum and Control (0-3): <i>→ small cadet interactions</i>	
Comments: <ul style="list-style-type: none"> - Good overview of the lesson objectives, Great question about mutation in the DNA sequence. - Good quiz. Good review of the quiz solutions. - Good analysis of DNA mutation → reference back to CH101 natural WRT EM radiation. - Nice pictures and diagrams that assist in understanding 	
Received by:	Date:

Addition Questions and Prompts for Discussion:

- ☒ Did the instructor state the learning objectives?
- ☒ Did the instructor provide context (show a link between the students' past experiences and the current objectives)? *5 min. EM radiation from CH101*
- ☐ What activities were used to present information or teach skills? Examples include lecturing, modeling, demos, etc.
- ☐ What learning modes were used by the cadets during this lesson? Examples include reading, listening, asking questions, solving problems, etc. *→ Instructor quiz*
- ☐ Did the activities cover a range of learning modes?
- ☒ Did the instructor assess learning during the lesson, either formally or informally?
- ☐ If so, did the instructor adjust teaching style as a result? *→ quiz*
- ☐ Did the instructor use any guided practice activities to practice the new skills or apply the new concepts?
- ☐ Were there any assignments for this lesson that allow the cadets to practice the skills or apply the new concepts from the lesson on their own?
- ☐ Were the cadets paying attention? If not, what methods were employed to ensure cadets pay attention and apply effort? *→ a few cadets were on their computers, but not reviewing course material or taking notes.*
- ☒ Were the cadets well-behaved? If not, how did the instructor respond? *→ YES. - PLAYING WORDS DURING QUIZ.*

Note: The questions in this section are meant to be discussion prompts and not requirements or to form the basis of a cut scale.

- Discussion grade *→ 14% of course points? (points breakdown)*
- Bed or coffee in class?
- TOP of SLIDES CUT OFF BY PROJECTOR.
- Instructor quiz (15 min) *→ How does it fit (points-wise) into the overall course points?*
- Several cadets w/o paper/pencil for in-class quiz.
 - section 7 of SIS.
- Documentation: CBE - citation style?
- Sign SIS.
- 35 min into class to start on LO's from this lesson.