Instructor Observed:	Observing Faculty:
DR. BIANCONI	LTC COWART
Time: 0740 (1 HOUR)	**Course/Subject:** CH 365 - THERMODYNAMICS
Date: 18 SEP 2023	**Number of Cadets:** 11

Students Were:

- [X] Working independently at their desks
- [ ] Working in small, cooperative groups
- [ ] Making a presentation
- [X] Listening to a lecture
- [ ] Viewing a film
- [ ] Taking a test
- [ ] Other:

Instructor was:

- [X] Lecturing
- [ ] Facilitating a question-and-answer sequence
- [X] Demonstrating a concept → MMA setup for EOS calculations.
- [X] Introducing a new concept
- [ ] Reviewing for a test
- [ ] Other:

Assessment:

Technical Mastery (0-3): - Excellent. Cadets were well-behaved and paying close attention, especially to MMA setup.

Presentation Style (0-3):

Classroom Decorum and Control (0-3):

Comments:

- Recommend trying to get cadets to engage in discussion more.
  ex. questions about number of roots in quadratic, etc.
- Nice guided practice w/ MMA problem.
- Good stress on units.

Received by:	Date:
	18 SEP 2023

Addition Questions and Prompts for Discussion:

- ☐ Did the instructor state the learning objectives? → Don't recall saying this.
- ☒ Did the instructor provide context (show a link between the students' past experiences and the current objectives)? → Building from visual EOS.
- ☐ What activities were used to present information or teach skills? Examples include ~~lecturing~~, modeling, ~~demos~~, etc. → mma setup.
- ☒ 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? YES.
- ☐ 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? YES. Example problem
- ☒ 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? HW
- ☐ 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.

Instructor Observed: MAJ Patrick D. Bowers	**Observing Faculty: Dr. Simuck F. Yuk**
Time: 09:50 – 11:05	**Course/Subject: CH101**
Date: 09/11/23	**Number of Cadets: 20**

Students Were:

- ✓ Working independently at their desks
- ✓ Working in small, cooperative groups
- ☐ Making a presentation
- ✓ Listening to a lecture
- ☐ Viewing a film
- ✓ Taking a test (in this case, instructor quiz)
- ☐ Other:

Instructor was:

- ✓ Lecturing
- ✓ Facilitating a question-and-answer sequence
- ✓ Demonstrating a concept
- ✓ Introducing a new concept
- ✓ Reviewing for a test (in this case, instructor quiz)
- ☐ Other:

Assessment:

Technical Mastery (0-3): 3

Presentation Style (0-3): 3

Classroom Decorum and Control (0-3): 3

Comments: All the cadet were presented in the class on time and were ready for the class. At 09:50, the call to attention was announced and the section marcher reported the attendance to the instructor. At 09:51, the instructor quiz was given to assess the CH101 cadets' understandings on the previously covered lesson objectives and concepts, especially on the Coulomb's law, net effective charge, and electron configuration. Cease work was given at 09:58 and the cadets were given a chance to review and grade each peer's solution. Instructor went over the approved solution for the problems given in the instructor quiz. From 10:10, the lesson objectives and class materials were covered (on the atomic forces). The trend in periodic table was the focus of this lesson (in terms of atomic radii, first ionization energy, and net effective charge). The legacy behind how the period table was constructed was given at the beginning of lecture, so the cadets can get interest in historical chemistry concepts. At 10:30, the cadets were given a chance to discuss the trend in periodic table as a group and answer the instructor's question as a group. The rest of after-class time was allocated to answer any question for cadets on the CH101 materials. The cadets were engaging the whole time, along with listening and asking various questions on the CH101 contents. Important concepts in the lesson were prepared in the instructor's auxiliary boards to efficiently manage time. Overall, instructor did a great job facilitating the in-class discussion on the learning objectives and assess the cadets' understanding on the lesson materials.

Received by: Patrick Bowers	**Date: 09/11/23**

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: LTC Samuel V. Cowart	**Observing Faculty: Dr. Yuk**
Time: 11:15 to 11:50	**Course/Subject: CH485**
Date: 09/14/23	**Number of Cadets: 9**

Students Were:

- ✓ Working independently at their desks
- ☐ Working in small, cooperative groups
- ☐ Making a presentation
- ✓ Listening to a lecture
- ☐ Viewing a film
- ☐ Taking a test
- ☐ Other:

Instructor was:

- ✓ Lecturing
- ✓ Facilitating a question-and-answer sequence
- ✓ Demonstrating a concept
- ✓ Introducing a new concept
- ☐ Reviewing for a test
- ☐ Other:

Assessment:

Technical Mastery (0-3): 3

Presentation Style (0-3): 3

Classroom Decorum and Control (0-3): 3

Comments: All the cadet were presented in the class on time and were ready for the class. The models were introduced for cadets to be used as an anchoring point on how to apply the theoretical concepts introduced in the lesson. The instructor encouraged the discussion amongst the cadets by facilitating the question-and-answer questions, along with the board works. The focus of discussion was based on how to treat the concentration terms in different solution phase in the batch experiments. The solution was given during the class (in the form of excels and Mathematica), so the cadets can check their solutions against the instructor's. The cadets were actively engaged, and the questions were asked to clarify the definition of concentration terms. The cadets were recommended to go over the board question due to one of problems introduced in the problem set being like the board question (another way to reinforce the concepts). Overall, the instructor did a great job promoting in-class discussion on the learning objectives and assessing the cadets' understanding on the lesson materials.

Received by: LTC Cowart	**Date: 09/14/23**

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:	Lowell	**Observing Faculty:**	Biaglow
Time:	0950-1100	**Course/Subject:**	CH101 - Periodic Trends
Date:	11 September 2023	**Number of Cadets:**	~18 (I did not count)

Students Were:

- [ ] Working independently at their desks
- [ ] Working in small, cooperative groups
- [ ] Making a presentation
- [x] Listening to a lecture
- [ ] Viewing a film
- [ ] Taking a test
- [ ] Other:

Instructor was:

- [x] Lecturing
- [ ] Facilitating a question-and-answer sequence
- [ ] Demonstrating a concept
- [ ] Introducing a new concept
- [ ] Reviewing for a test
- [ ] Other:

Comments:

-In reviewing 3.88, you showed IE1 through IE4 for aluminum. IE3 was 2,750 kJ/mol and IE4 was 11,600 kJ/mol. You made a comment of something like “we would not expect to see that in nature.” The cadets need a frame of reference to see how large this jump is. Maybe multiples of RT, where R is 8314 J/mol·K?

-The problem took a while to go through. No problem, but I would have a BLUF at the end; summarize what you told them. Also, to make this problem flow more quickly, use the projector and uncover your hand-written solution (on paper) one step at a time.

-At 10:17, when you took questions about atomic radii, Cadets could use an example of why atomic radii are important. You compared K+ and Cl-. You can compare the KCl unit cell for the salt to NaCl. Another good example is ionic conductivity in water. Both salts dissolve in water, but they do not conduct electric current to the same degree, and the difference is measurable with a conductivity electrode.

-Demo was very good. Consider line of site through the blast shield. Cadets were struggling to see the metal action on the surface of the water. Elevate the petri dish with a lab jack, or use the projector to put the action up on the screen.

-Lithium was in the news today. Here is an article: https://www.foxbusiness.com/economy/lithium-deposit-found-us-may-be-

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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:

It would have been good to put the learning objectives up on the screen. Cadets were very well-behaved and interested in the lecture. They were respectful and participated. However, when CPT Lowell instructed cadets to use periodic trends to answer questions and to check answers with RDCs, a few cadets did the exact opposite. Cadet Katz and Stevens looked up the answers first.

- example - empirical formulas that lead to multiple molecular formulas or same Mol. Formula but diff structures

- How do we get the molecular mass w/o knowing molecular formula?

Instructor Observed: CPT TOBERGTE	Observing Faculty: LTC COWART
Time: 1410	Course/Subject: CH101
Date: 13 SEP 2023	Number of Cadets: 20 → 19 PRESENT

Students Were:

- € Working independently at their desks
- € Working in small, cooperative groups → AT BOARDS
- € Making a presentation
- € Listening to a lecture
- € Viewing a film → VIDEO ON BONDING ($Na + Cl_2$ RXN)
- € Taking a test → EOH QUIZ
- € Other:

Instructor was:

- € Lecturing
- € Facilitating a question-and-answer sequence
- € Demonstrating a concept
- € Introducing a new concept
- € Reviewing for a test
- € Other:

Assessment:

Technical Mastery (0-3): Excellent technical approach and style in the classroom. Great job!

Presentation Style (0-3):

Classroom Decorum and Control (0-3):

Comments:

- Started w/ questions from cadets (~5 min into class)
- Began w/ Iron instructor quiz?
- ADMIN (~5 min) Instructor about teaching style for cadet feedback.
  - CH102 sign-ups → great time to plug for the major (CCLS)
  - Random HW checks.

~15 min of current lesson objectives. Focused on trouble areas.

- Answered waves of posters for discussion.
- Used links to previous concepts.

Received by:	Date: 13 SEP 23

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)? Traff and periodic trends on videos.

€ What activities were used to present information or teach skills? Examples include lecturing, modeling, demos, etc. , videos

€ 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? Q/A.

€ If so, did the instructor adjust teaching style as a result? → different approaches to concepts.

€ Did the instructor use any guided practice activities to practice the new skills or apply the new concepts? Board work in groups.

€ 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. Good class.

€ 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.

- ~5 min for group work on EF/MF
- RETURN TO SEATS → some lag b/w command and execution.
  - Try CALL for highlight b/w EF/MF.
- Board briefs (~5 min) good.
- HW Lewis structures for ~5 min.
- ~8 min unstructured time
  - Maybe start a problem that they have to guide you through. with random call-outs to cadets.
- EOH reminder of time.

GOOD CLASS!