Course Redesign to Unlock 🗝 Student E N G A G E M E N T

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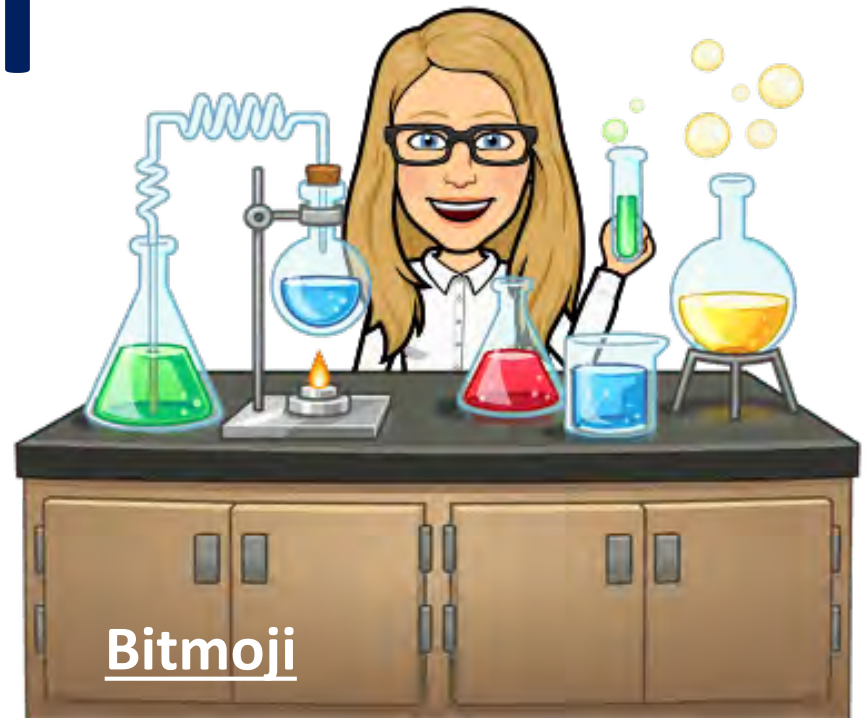


Resources for Organic Chemistry

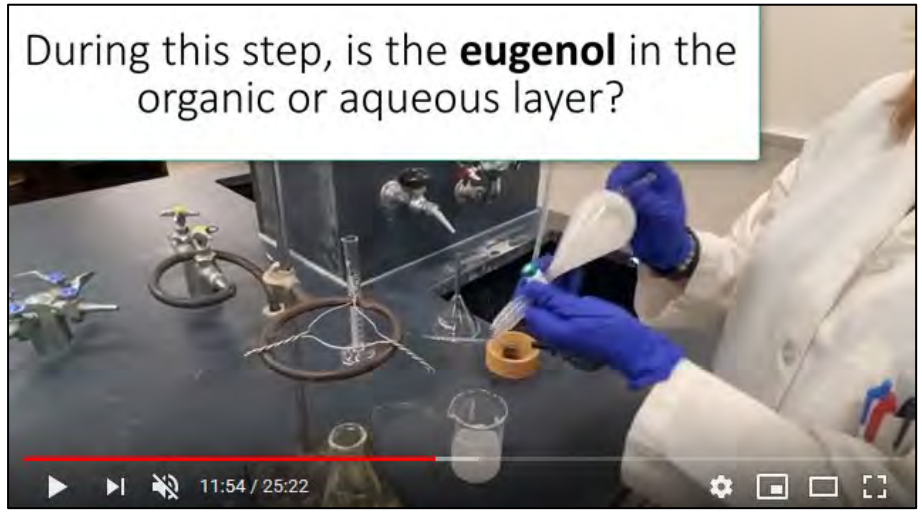
BeyondLabz ($30/year)

COVID-19 remote teaching resources

O-Chem Active Learning Repository

Worksheets,
Clicker Questions,
BeyondLabz…

https://www.cpp.edu/~lsstarkey/local

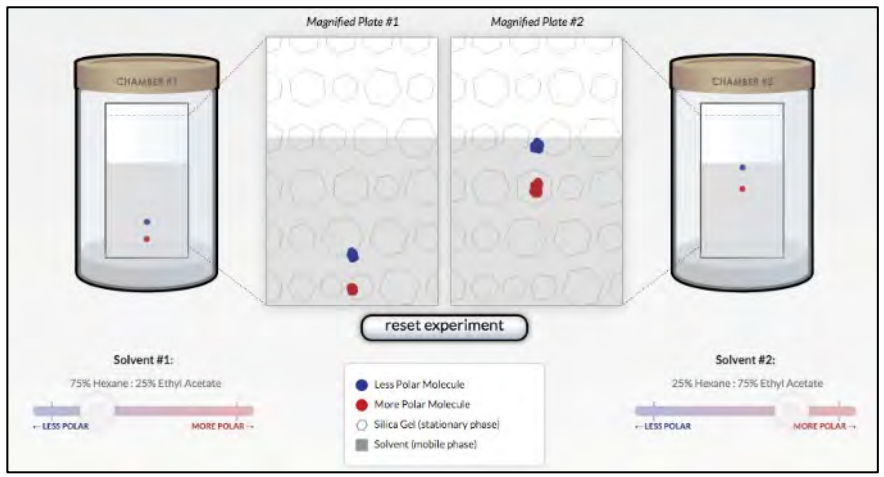


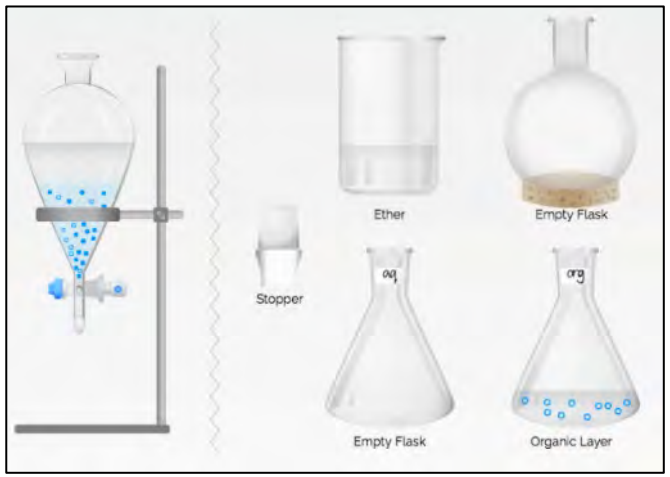
“Inquisitive” lab demos

eugenol video has over 12,000 views since March 2020

Animations

TLC & Extraction

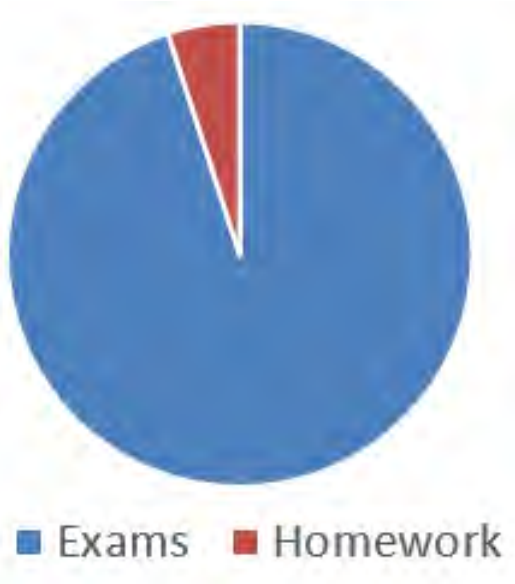




Remote Teaching → Course Redesign

To Reduce Cheating, *Minimize High-Stakes Exams*

- Pre-pandemic grading:
  95% exams, 5% homework
- Major redesign needed!



Chap. 1, 2, 3	Exam I	100 pts (20%)	Thursday, February 14 (50 min. during class time)
Chap. 4, 5, 15	Exam II	100 pts (20%)	Thursday, March 14 (50 min. during class time)
Chapters 6, 7	Exam III	100 pts (20%)	Thursday, April 18 (50 min. during class time)
Chapters 1-11	Final Exam	200 pts (40%)	Tue, 5/14 or Thu, 5/16 (see schedule for times)

Remote Teaching → Course Redesign

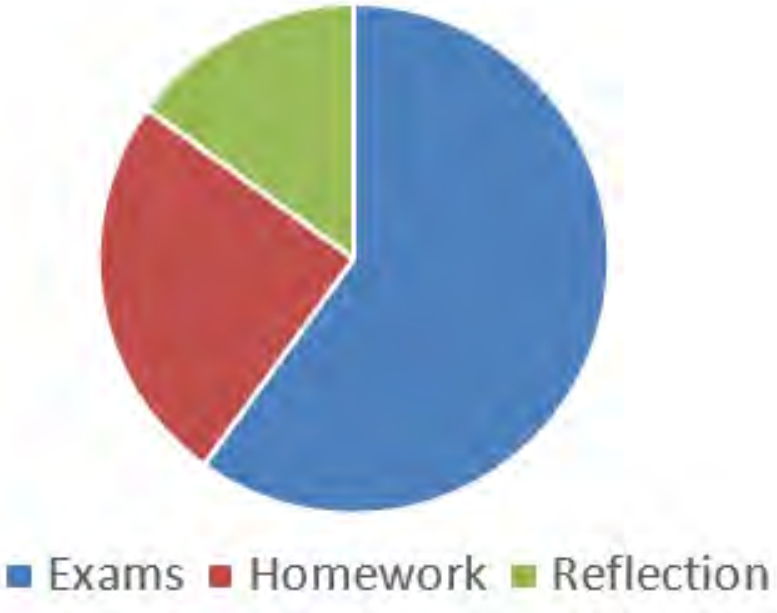
New Grading Scheme

- 60% exams, lower-stakes final & lowest midterm is dropped
- 25% homework (WileyPLUS & "free red ink" assignments)
- 15% reflection (study groups, exam wrappers, writing prompts)

How will your learning be measured?

Course grades are based on textbook-based homework (EOC), occasional quizzes, brief weekly assignments, three written midterm exams, and a final exam. I am planning on proctoring the written exams synchronously via Zoom, but please let me know if you need to adjust your time slot. *Each exam is cumulative but will emphasize the immediately preceding chapters.* Exams must be taken as scheduled and NO make-up exams will be given, but **the lowest midterm grade will be dropped**. If more than one midterm is missed, a grade of zero will be assigned for the missing midterm exam(s).

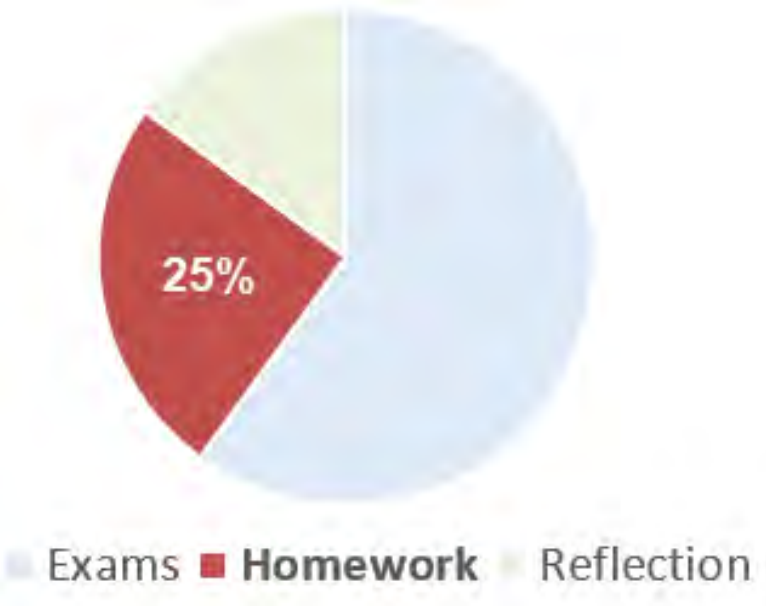
Homework problems		125 pts	(25%)	End-of-Chapter (EOC) problems/WileyPLUS/Quiz
Weekly study/reflection		75 pts	(15%)	Friday Fives, OLC Study Group, Exam Wrapper…
Ch. 1, 2, 3	Exam I	100 pts	(40%)	Thursday, 2/18 (60 min. during class time)
Ch. 4, 5, 15	Exam II	100 pts		Thursday, 3/18 (60 min. during class time)
Ch. 6, 7	Exam III	100 pts		Thursday, 4/22 (60 min. during class time)
Ch. 1-11	Final Exam	100 pts	(20%)	Tuesday 5/18 (see schedule for times)



Goal: Engage and Motivate Students!

WileyPLUS for Engagement with Textbook

25% Homework: Klein SkillBuilders and/or End-of-Chapter Problems



- If you value it, assign points to it!
  (…and then students value it!)
- Encourages self-assessment and use of Solutions Manual
- **WileyPLUS**: interaction with e-textbook/resources, auto-grading = 24/7 feedback, 100% redesigned

WileyPLUS customizable course shell

Facilitates use of textbook, navigation through material

- Instructor Resources (Lecture Slides, Clicker Questions, Test Bank, Chapter Images)
- Getting Started
  - Klein, Organic Chemistry 4e, 2nd Semest
- Module 0: Academic Integrity
  - Academic Honesty Quiz — 100 pts
- Module 3: Acids and Bases
- Module 4: Alkanes and Cycloalkanes
- Module 5: Stereoisomerism
- Module 6: Chemical Reactivity and Mechanisms
- Module 7: Alkyl Halides: Nucleophilic Substitution and Elimination Reactions

Module 8: Addition Reactions of Alkenes

- DID YOU EVER WONDER...what Styrofoam is and how it is made?
- 8.1 - 8.4: Introduction & Nomenclature of Alkenes — 35 pts
- 8.5: Hydrohalogenation (SkillBuilders 8.1 & 8.2) — 75 pts
- 8.6 - 8.8: Addition of H2O (SkillBuilders 8.3 & 8.4) — 80 pts
- 8.9: Catalyic Hydrogenation (SkillBuilder 8.5) — 20 pts
- 8.10: Halogenation and Halohydrin Formation (SkillBuilder 8.6) — 30 pts
- 8.11 - 8.13: Dihydroxylation and Oxidative Cleavage (SkillBuilders 8.7 & 8.8) — 55 pts
- 8.14: Predicting the Products of an Addition Reaction (SkillBuilder 8.9) — 30 pts
- 8.15: Synthetic Strategies (SkillBuilders 8.10, 8.11 & 8.12) — 85 pts
- End of Chapter Problems: Chapter 8 — 160 pts
- Mechanism Quiz: Chapter 8 — 60 pts

8.6 - 8.8: Addition of H2O (SkillBuilders 8.3 & 8.4)

Readings and Interactives:

- 8.6: Acid-Catalyzed Hydration
  - A Mechanism for Acid-Catalyzed Hydration of Alkenes
  - Mechanism 8.2 Acid-Catalyzed Hydration
- 8.7: Oxymercuration-Demercuration
- 8.8: Hydroboration-Oxidation
  - A Mechanism for Hydroboration Oxidation of Alkenes
  - Mechanism 8.3 Hydroboration-Oxidation

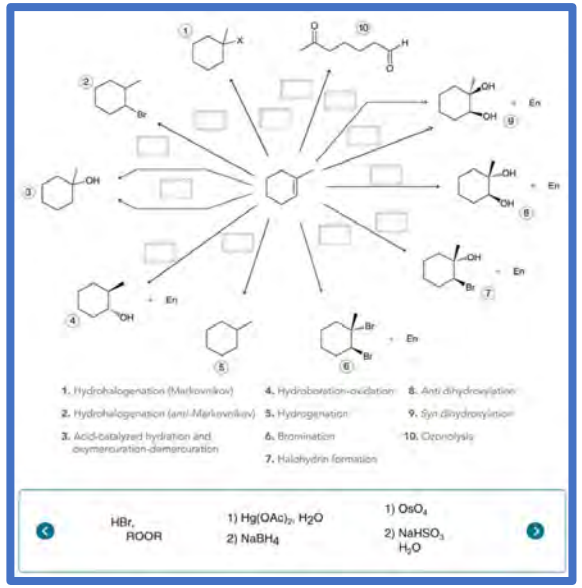
Solved Problem Videos:

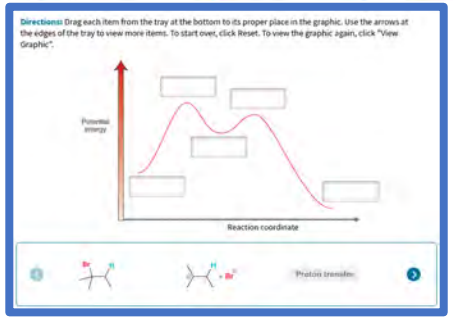
SkillBuilder 8.3, Problem 8.15a

SkillBuilder 8.3, Problem 8.15b

SkillBuilder 8.4, Problem 8.21

Legend: Reading, Video, Interactive, Lightboard

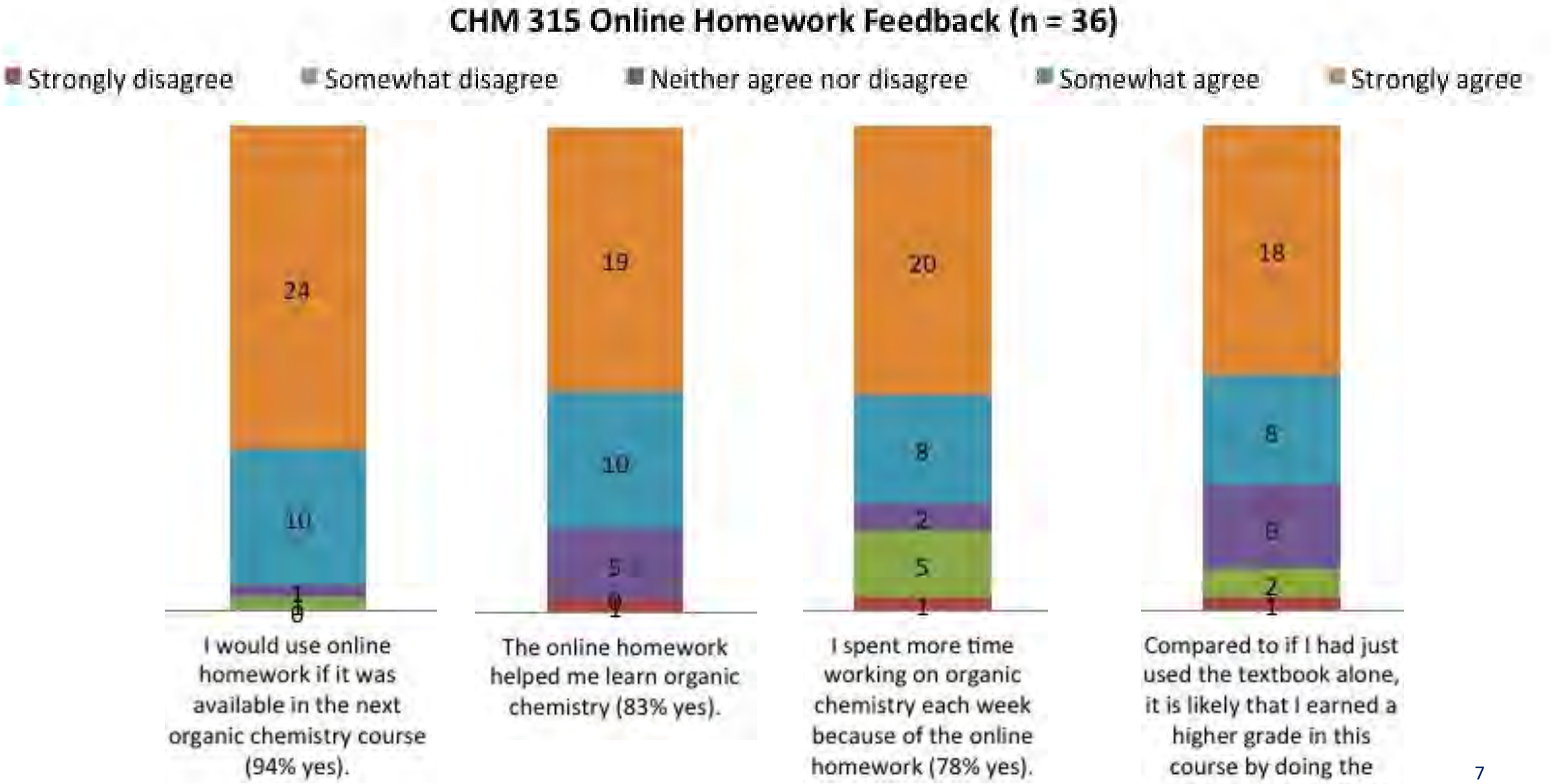




ACS Final Review

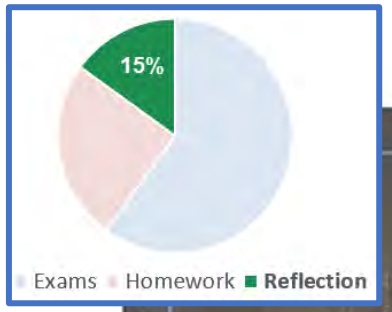
- ACS Problems: Chapters 1-6 — 52 pts
- ACS Problems: Chapters 7-11 — 43 pts
- ACS Problems: Chapters 12-18 — 56 pts
- ACS Problems: Chapters 19-22 — 31 pts
- Mechanism Quizzes: Chapters 7-13 — 25 pts

Online Homework = Favorable Feedback



Keeping Students Motivated

15% of grade:
study groups and weekly "Friday5" reflection



<u>Motivate Lab</u> training (**GPS**)

- **G**rowth Mindset
- **P**urpose & Relevance
- **S**ense of Belonging

Teresa Hulleman
teresa@motivatelab.org

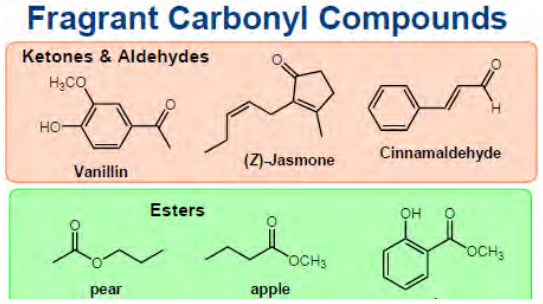
GPS: Encouraging a Growth Mindset

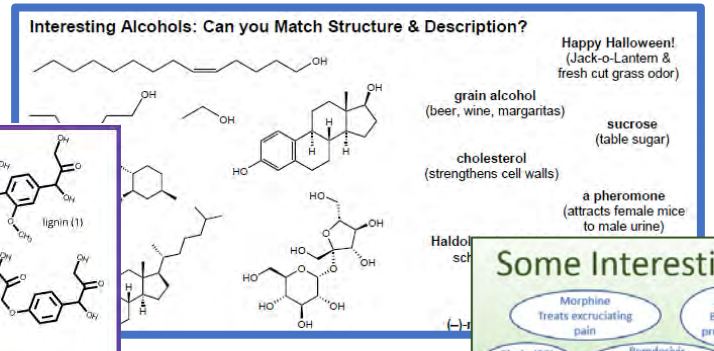
- Value formative assessment (points for textbook problems!)
- Discuss study strategies
- Drop lowest exam
- Metacognitive exercises
  - Exam Wrapper
  - Weekly study plan check-in

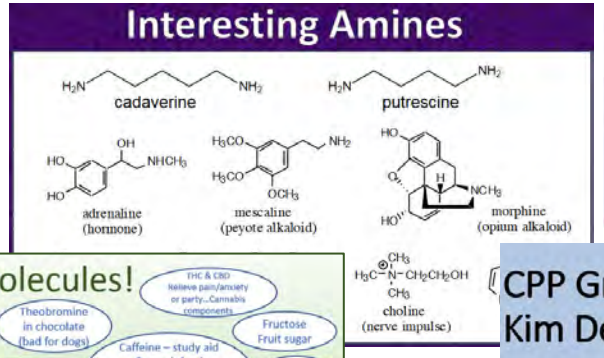
resources

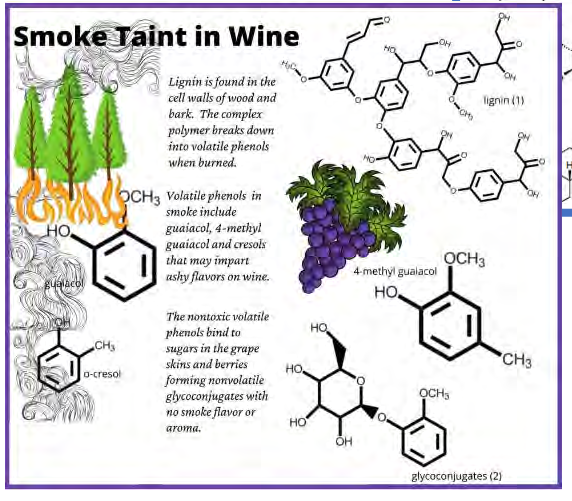
GPS: Focusing on Purpose and Relevance

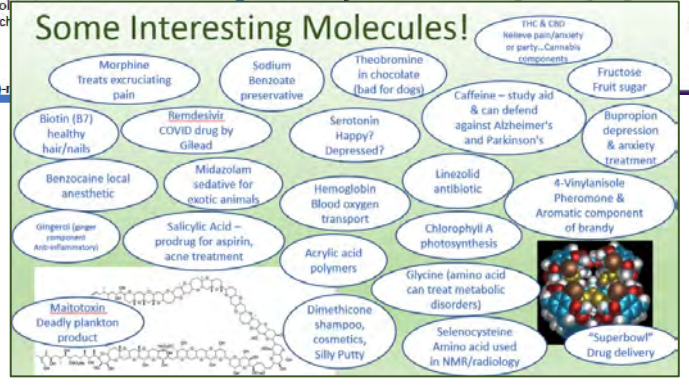
- Weekly reflection assignments
  - Find/share an interesting molecule
  - Tell me why this course matters to you
- Share stories of former students
- Provide "hooks" to grab attention











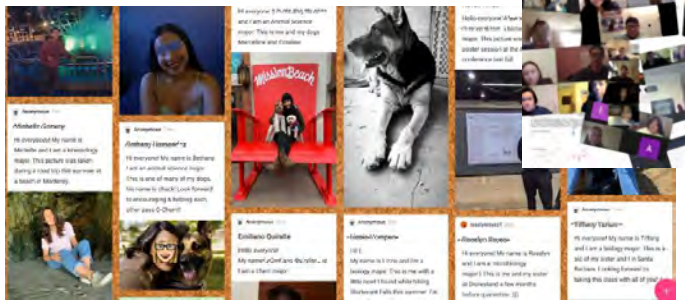
GPS: Build Community, Sense of Belonging

Introduction video

- Introduce yourself, share your passion

Course Padlet

- Students can introduce themselves

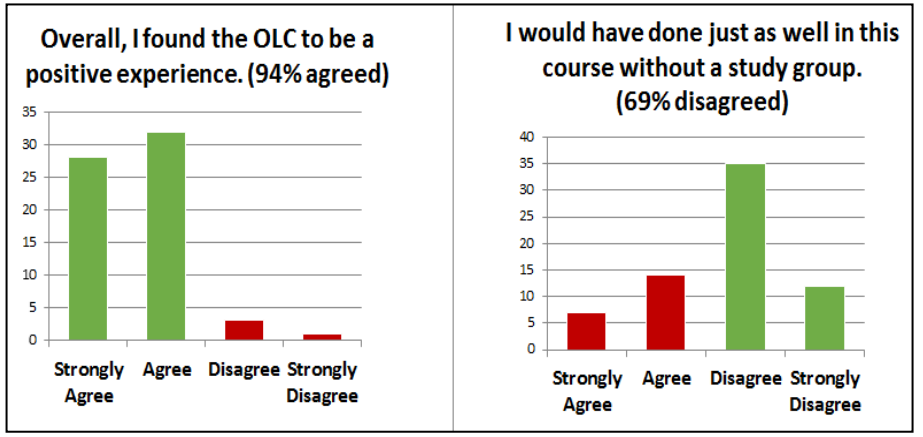


Encourage study groups

- Organic Learning Community (OLC)
- Offer credit for weekly report w/selfie pic

Foster communication

- Discussion boards, Discord, Google Voice



Friday5 Prompts (Gradescope)

- Create a Concept Map
- Add a Zoom Profile picture!
- Research/share Nanotech topic
- Start-Stop-Continue (mid-semester feedback)
- Mental Health check-in
- Upload a picture of your flash cards
- Celebrate NCW (explore webpage)
- Favorite volunteer activities? YouTuber? Autumn activities?