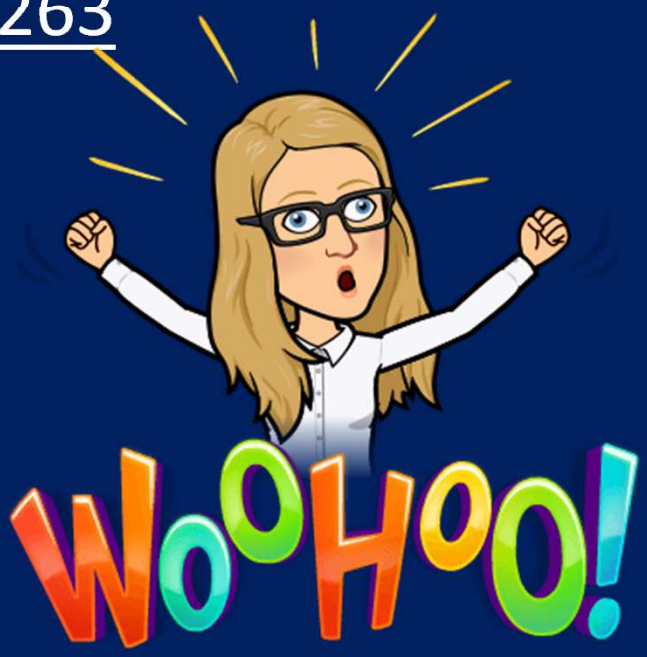
For clicker question voting, go to:
https://pollev.com/lauriestarke263



Dr. Laurie S. Starkey

Cal Poly Pomona

CHM 3150 Organic Chemistry II
Announcements 12/4/25 – LAST DAY!!

Today's Topic: Chapter 22 Amines

Chapter 22
- ✓ **Watch**
- ✓ **Read**
- ✓ **Practice**

Step 1

- Read Klein **22.1, 22.2, 22.3** for nomenclature and properties of amines
- Note: we have already covered diazonium salts (ArN_2^+), sections 22.10 and 22.11
- Watch flipped lecture
- Work through **SkillBuilder 22.1** and **Conceptual Checkpoints** (problems 22.1 - 22.9, 22.23)
- FYI (will not be on the final): Klein **22.9 Hofmann Elimination**

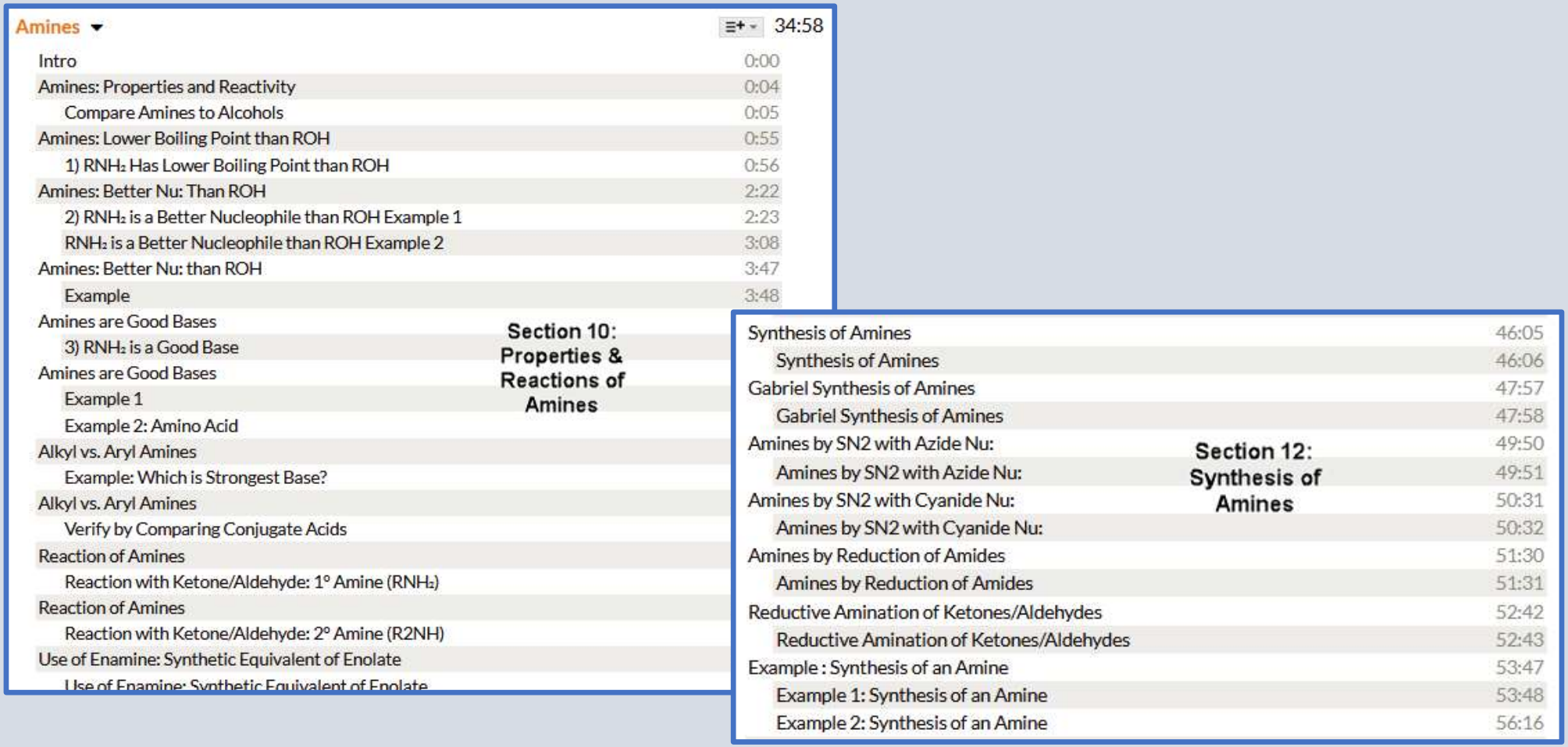
Amines
35 minutes
skeleton notes pages 22-1 to 22-4

Step 2 - ***OPTIONAL***
GOOD FOR FINAL EXAM REVIEW

- Read Klein 22.4 - 22.7 **Preparation of Amines**
- Watch flipped lecture
- Work through **SkillBuilder 16.3** (problems 21.14 - 21.28)
- Suggested textbook problems: 1–67 (skip 5, 19-28, 41, 47-56, 59, 60c, 65)
- **Diels-Alder homework** (submit to Gradescope) and answer key

Synthesis of Amines
10 minutes
skeleton notes page 22-5

Educator: Ch. 22 Amines

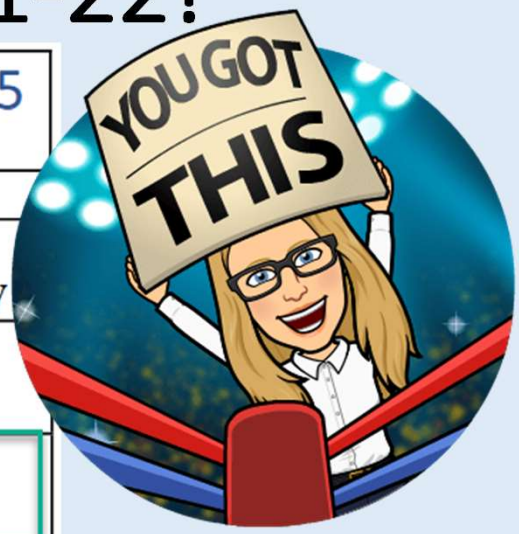


Final Exam covers Chapters 1-22!

CHM 3150 Organic Chemistry II, Dr. Laurie S. Starkey, Fall 2025

Tentative Schedule (Chapter and Worksheet #)

Week	Mon	Tues	Wed	Thurs	Fri
14	11/24	11/25 ~~Exam III~~	11/26	11/27 ~~Holiday~~	11/28 **Holiday**
15	12/1	12/2 ~~Ch. 16 #2~~	12/3	12/4 Ch. 22 #1	12/5
Finals (section)	12/8	**Tue. 12/9** 1:00–2:50pm (02/1pm) 5:00–6:50 pm (03/5:30)	12/10	**Thurs. 12/11** 3:00–4:50 pm (01/4pm)	12/12



110-minute multiple-choice ACS exam

In-person on 12/9 or 12/11

Scantron and scrap paper will be provided!

Final Exam

Section 02 (1 pm class in 24D-1224): **Tuesday 12/9 1:00–2:50 pm**

Section 03 (5:30 pm class in 24A-1403): **Tuesday 12/9 5:00–6:50 pm**

Section 01 (4 pm class in 15-1823): **Thursday 12/11 3:00–4:50 pm**

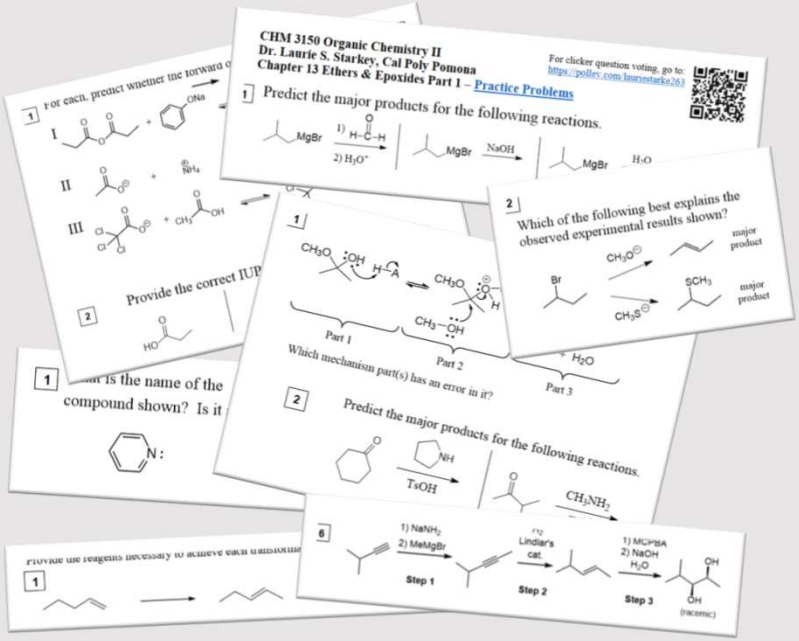
Review session: Sunday 12/6, 8 pm Worksheet

(review covers mostly CHM 3140 topics, see Week 1-15 worksheets above for CHM 3150 topics!)

Final Exam Review

CHM 3150 Exams 1/2/3 & Exam Reviews 1/2/3

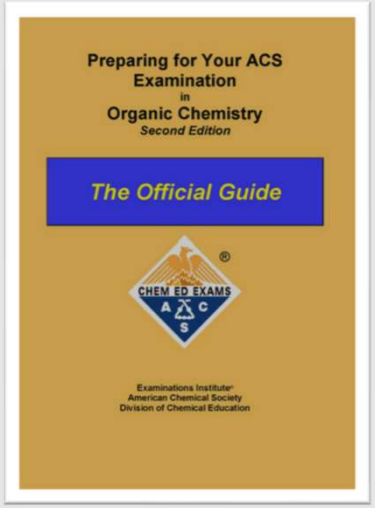
CHM 3150 Homework & Worksheets (x27!)



Resources on Course Homepage

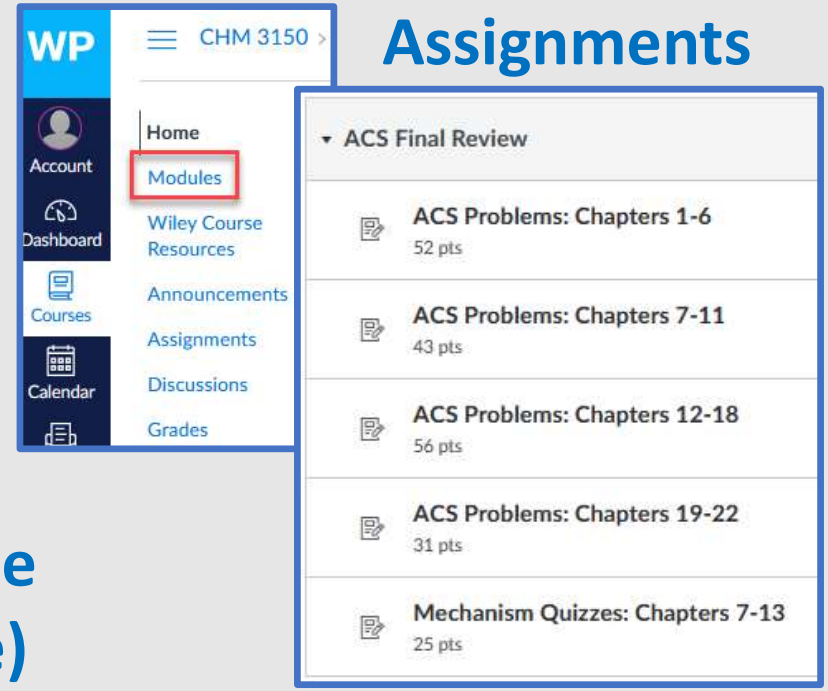
ACS Final Exam (Ch. 1-22 topics):

- ACS Exam Practice handout provided by the ACS and answer key and detailed solutions
- Practice multiple-choice problems written by Dr. Reusch
- All Functional Groups Nomenclature Review Problems and answer key
- Stereochemistry practice problems and answer key
- IR and NMR lectures and handouts



ACS Study Guide (library reserve)

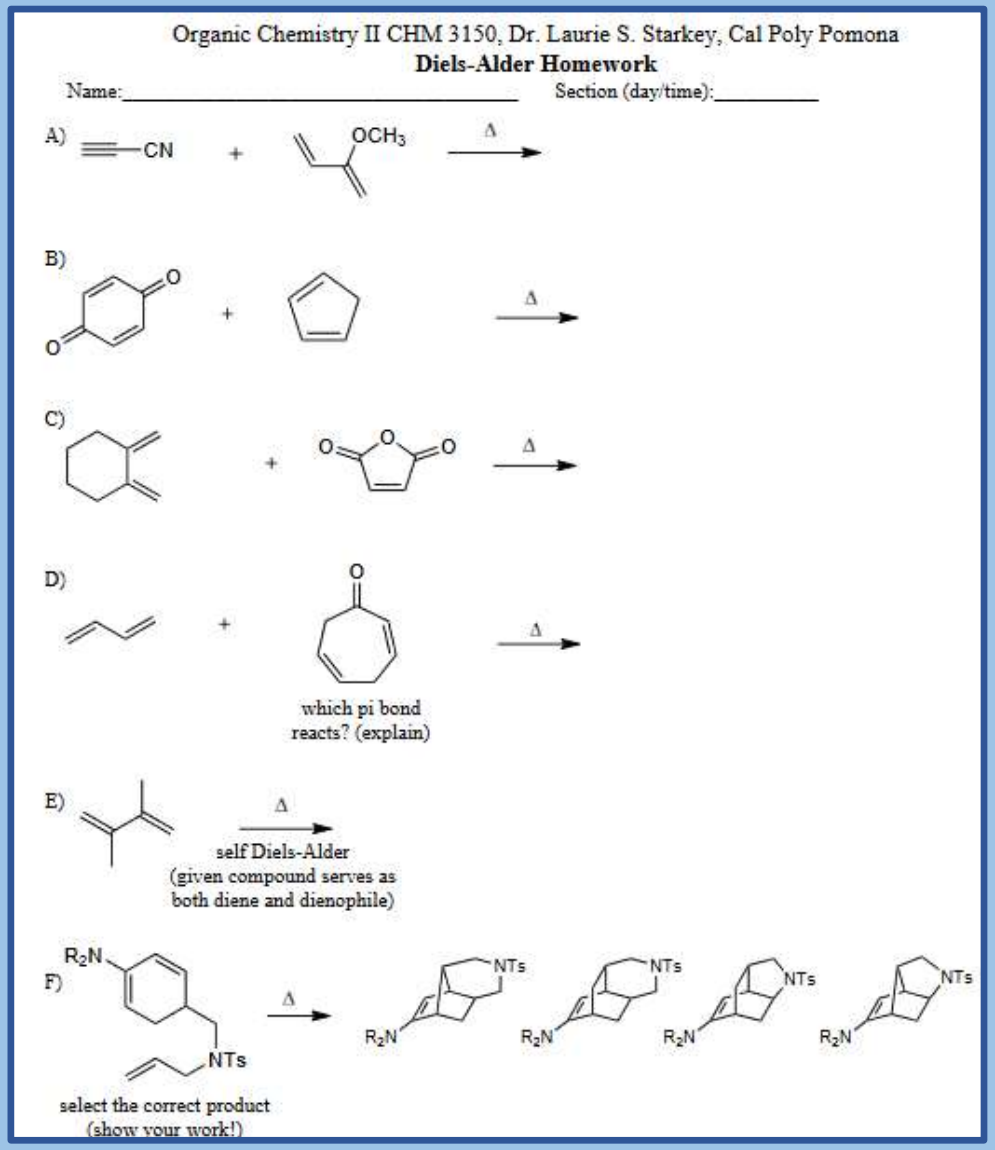
WileyPLUS Assignments



Last “Free Red Ink” Homework:

Diels-Alder

No EOC-SkillBuilder credit for Ch 16/22



Organic Chemistry II CHM 3150, Dr. Laurie S. Starkey, Cal Poly Pomona

Diels-Alder Homework

Name:_____ Section (day/time):_____

A)

B)

C)

D)

which pi bond reacts? (explain)

E)

self Diels-Alder (given compound serves as both diene and dienophile)

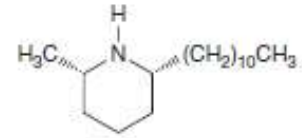
F)

select the correct product (show your work!)

An Amino Neurotoxin Beaten by its Basicity

WorldLinks | Chemical Warfare Among Ants

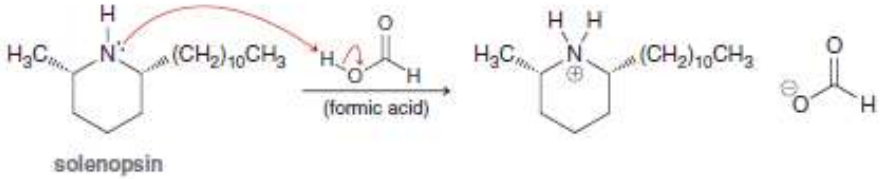
Humans are not the first species to use chemical warfare. Many ant species can inject formic acid when they bite, and the formic acid greatly increases the pain of the bite (*formica* is the Latin word for ant). Fire ants, a genus of aggressive ants that invaded the southern United States from Argentina in the 1920s, have amplified the level of chemical warfare by making an even more toxic compound, solenopsin, which is a cyclic amine (shown here).



solenopsin

Solenopsin, a potent neurotoxin, is a hydrophobic molecule that dissolves through the waxy cuticle layer of insects. Fire ants can squirt solenopsin onto enemy ants and kill them with their toxin. Tawny crazy ants, another invasive species of aggressive ants from Argentina, have invaded the southern US more recently and have been taking over territory inhabited by fire ants. In battles between fire ants and crazy ants, the crazy ants do get sprayed with the fire ants' neurotoxin, but they retreat and secrete formic acid from the tip of their abdomen and groom themselves with formic acid. Afterwards, they return to battle, seemingly unaffected by the exposure to the fire ants' neurotoxin. How does the formic acid block the action of solenopsin? Although there is no definitive answer yet, the simplest explanation is that formic acid chemically neutralizes the amine group of solenopsin, forming an ionic ammonium ion salt that is not permeable/soluble in the ant's hydrophobic cuticle.


A creative rendition of a crazy ant, armed and ready to battle fire ants.



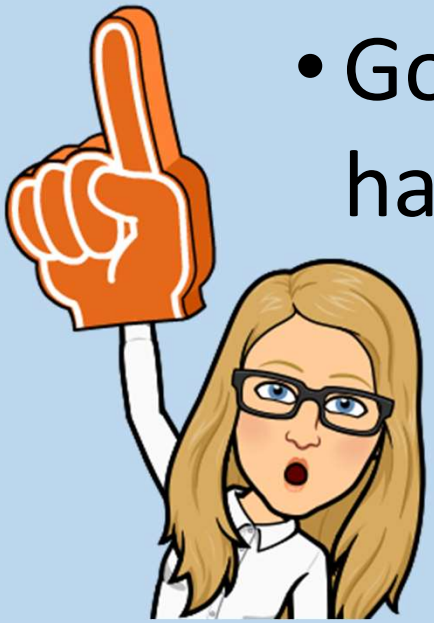
solenopsin

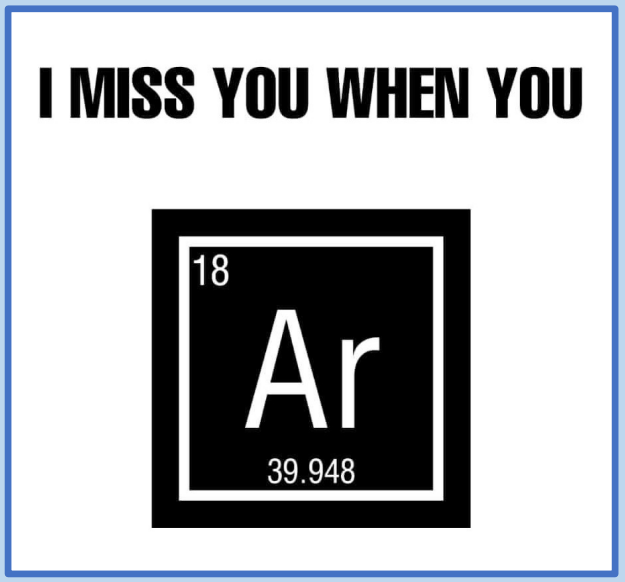
As a result, the ionic form of solenopsin never gets inside the crazy ants. Virtually unaffected by the neurotoxin, the crazy ants are able to continue battling the fire ants.

The phenomenon of one ant taking over the territory of another ant had never been observed in the US before the invasion of the crazy ants. This is a great example of how chemistry is involved in animal behavior and ecology.

Thank you for your dedication & hard work this semester!

- It has been a pleasure working with you!
- Good luck on finals & have a great winter break!





All I want for Christmas is ^{235}U