

Appendix 2

SALG Post Survey

Survey introduction for students

Teachers value students' feedback and take it into account when improving their courses. Please be as precise as you can in your answers. Please choose "not applicable" for any activity you did not do. You may find one or more questions at the end of each section that invite an answer in your own words. Please comment candidly, bearing in mind that future students will benefit from your thoughtfulness. Remember that this is an anonymous survey: your teacher will never know what any individual student has written.

Items and response fields

Q1_1. As a result of your work in this class, what GAINS DID YOU MAKE in your UNDERSTANDING of each of the following? - How to use the Periodic Table for acid strength and electronegativity trends

- Not applicable
- Not at all
- Just a little
- Somewhat
- A lot
- A great deal

Q1_2. As a result of your work in this class, what GAINS DID YOU MAKE in your UNDERSTANDING of each of the following? - How to draw Lewis Dot structures

- Not applicable
- Not at all
- Just a little
- Somewhat
- A lot
- A great deal

Q1_3. As a result of your work in this class, what GAINS DID YOU MAKE in your UNDERSTANDING of each of the following? - How to assign formal charge

- Not applicable
- Not at all
- Just a little
- Somewhat
- A lot
- A great deal

Q1_4. As a result of your work in this class, what GAINS DID YOU MAKE in your UNDERSTANDING of each of the following? - How to predict 3-D shapes and polarity of molecules

- Not applicable
- Not at all
- Just a little
- Somewhat
- A lot
- A great deal

Q1_5. As a result of your work in this class, what GAINS DID YOU MAKE in your UNDERSTANDING of each of the following? - Orbitals, including atomic, hybrid and molecular

- Not applicable
- Not at all
- Just a little
- Somewhat
- A lot
- A great deal

Q1_6. As a result of your work in this class, what GAINS DID YOU MAKE in your UNDERSTANDING of each of the following? - How to name alkanes, alkenes, alcohols, alkyl halides, ethers, thiols, epoxides, and enantiomers by the IUPAC system

- Not applicable
- Not at all
- Just a little
- Somewhat
- A lot
- A great deal

Q1_7. As a result of your work in this class, what GAINS DID YOU MAKE in your UNDERSTANDING of each of the following? - How to identify all the functional groups present in a given organic chemical

- Not applicable
- Not at all
- Just a little
- Somewhat
- A lot
- A great deal

Q1_8. As a result of your work in this class, what GAINS DID YOU MAKE in your UNDERSTANDING of each of the following? - How to propose and predict the outcome of acid-base reactions

- Not applicable
- Not at all
- Just a little
- Somewhat
- A lot
- A great deal

Q1_9. As a result of your work in this class, what GAINS DID YOU MAKE in your UNDERSTANDING of each of the following? - How IR, NMR, and mass spectroscopy work & how I can use each kind of spectrum to identify structural facets of an unknown molecule

- Not applicable
- Not at all
- Just a little
- Somewhat

- A lot
- A great deal

Q1_10. As a result of your work in this class, what GAINS DID YOU MAKE in your UNDERSTANDING of each of the following? - How to recognize the difference between conformations, constitutional isomers, and configurational isomers, including enantiomers

- Not applicable
- Not at all
- Just a little
- Somewhat
- A lot
- A great deal

Q1_11. As a result of your work in this class, what GAINS DID YOU MAKE in your UNDERSTANDING of each of the following? - How to identify chiral molecules

- Not applicable
- Not at all
- Just a little
- Somewhat
- A lot
- A great deal

Q1_12. As a result of your work in this class, what GAINS DID YOU MAKE in your UNDERSTANDING of each of the following? - How to draw the stereoisomers of chiral compounds

- Not applicable
- Not at all
- Just a little
- Somewhat
- A lot
- A great deal

Q1_13. As a result of your work in this class, what GAINS DID YOU MAKE in your UNDERSTANDING of each of the following? - How to identify the stereochemical relationship between structures

- Not applicable
- Not at all
- Just a little
- Somewhat
- A lot
- A great deal

Q1_14. As a result of your work in this class, what GAINS DID YOU MAKE in your UNDERSTANDING of each of the following? - How to explain the mechanisms of uni- and bimolecular substitutions and eliminations

- Not applicable
- Not at all
- Just a little
- Somewhat
- A lot
- A great deal

Q1_15. As a result of your work in this class, what GAINS DID YOU MAKE in your UNDERSTANDING of each of the following? - How to identify nucleophiles and electrophiles and predict reactions between them

- Not applicable
- Not at all

Just a little
Somewhat
A lot
A great deal

Q1_16. As a result of your work in this class, what GAINS DID YOU MAKE in your UNDERSTANDING of each of the following? - How to write a proper reaction mechanism for a given reaction with known products

Not applicable
Not at all
Just a little
Somewhat
A lot
A great deal

Q1_17. As a result of your work in this class, what GAINS DID YOU MAKE in your UNDERSTANDING of each of the following? - How to write mechanisms to predict outcomes for a half dozen types of addition reactions

Not applicable
Not at all
Just a little
Somewhat
A lot
A great deal

Q1_18. As a result of your work in this class, what GAINS DID YOU MAKE in your UNDERSTANDING of each of the following? - How to determine whether or not a reactive intermediate will rearrange its internal structure prior to further reaction

Not applicable
Not at all
Just a little
Somewhat
A lot
A great deal

Q1_19. As a result of your work in this class, what GAINS DID YOU MAKE in your UNDERSTANDING of each of the following? - How to recognize when resonance exists in a given structure

Not applicable
Not at all
Just a little
Somewhat
A lot
A great deal

Q1_20. As a result of your work in this class, what GAINS DID YOU MAKE in your UNDERSTANDING of each of the following? - How to use resonance, when it is present, to predict the reactivity of a given compound

Not applicable
Not at all
Just a little
Somewhat
A lot
A great deal

Q1_21. As a result of your work in this class, what GAINS DID YOU MAKE in your UNDERSTANDING of each of the following? - (I can explain) the relationships between the main concepts listed above

Not applicable
Not at all
Just a little
Somewhat
A lot
A great deal

Q2_1. (I can) list several common synthesis methods for, as well as several common reactions of... Alkyl halides

Not applicable
Not at all
Just a little
Somewhat
A lot
A great deal

Q2_2. (I can) list several common synthesis methods for, as well as several common reactions of... Alkenes

Not applicable
Not at all
Just a little
Somewhat
A lot
A great deal

Q2_3. (I can) list several common synthesis methods for, as well as several common reactions of... Alkynes

Not applicable
Not at all
Just a little
Somewhat
A lot
A great deal

Q2_4. (I can) list several common synthesis methods for, as well as several common reactions of... Alcohols

Not applicable
Not at all
Just a little
Somewhat
A lot
A great deal

Q2_5. (I can) list several common synthesis methods for, as well as several common reactions of... Thiols

Not applicable
Not at all
Just a little
Somewhat
A lot
A great deal

Q2_6. (I can) list several common synthesis methods for, as well as several common reactions of... Ketones and aldehydes

Not applicable
Not at all
Just a little
Somewhat
A lot
A great deal

Q2_7. (I can) list several common synthesis methods for, as well as several common reactions of... Carboxylic acids and their derivatives

- Not applicable
- Not at all
- Just a little
- Somewhat
- A lot
- A great deal

Q2_8. (I can) list several common synthesis methods for, as well as several common reactions of... Ethers

- Not applicable
- Not at all
- Just a little
- Somewhat
- A lot
- A great deal

Q2_9. (I can) list several common synthesis methods for, as well as several common reactions of... Epoxides

- Not applicable
- Not at all
- Just a little
- Somewhat
- A lot
- A great deal

Q3_1. I feel comfortable explaining...How to plan workable multi-step sequences of reactions that convert simple starting compounds into complex organic products using my knowledge of functional group reactions

- Not applicable
- Not at all
- Just a little
- Somewhat
- A lot
- A great deal

Q3_2. I feel comfortable explaining...How ideas presented in organic chemistry relate to ideas I have encountered in other chemistry courses

- Not applicable
- Not at all
- Just a little
- Somewhat
- A lot
- A great deal

Q3_3. I feel comfortable explaining...How ideas presented in organic chemistry relate to ideas I have encountered in classes outside of chemistry

- Not applicable
- Not at all
- Just a little
- Somewhat
- A lot
- A great deal

Q3_4. I feel comfortable explaining...How studying this subject area helps people address real world issues

- Not applicable
- Not at all
- Just a little

Somewhat
A lot
A great deal

Q4. Please comment on HOW YOUR UNDERSTANDING OF THE SUBJECT HAS CHANGED as a result of this class.

[TEXT FIELD]

Q16. Please comment on elements of how THE WAY THIS CLASS WAS TAUGHT helps you REMEMBER key ideas

[TEXT FIELD]

Q5_1. As a result of your work in this class, what GAINS DID YOU MAKE in the following SKILLS? - Finding published data I need for lab work and report writing

No gains
A little gain
Moderate gain
Good gain
Great gain
Not applicable

Q5_2. As a result of your work in this class, what GAINS DID YOU MAKE in the following SKILLS? - Critically evaluating debates in the media about issues related to science involving organic chemistry

No gains
A little gain
Moderate gain
Good gain
Great gain
Not applicable

Q5_3. As a result of your work in this class, what GAINS DID YOU MAKE in the following SKILLS? - Identifying patterns in data

No gains
A little gain
Moderate gain
Good gain
Great gain
Not applicable

Q5_4. As a result of your work in this class, what GAINS DID YOU MAKE in the following SKILLS? - Recognizing a sound argument and appropriate use of evidence

No gains
A little gain
Moderate gain
Good gain
Great gain
Not applicable

Q5_5. As a result of your work in this class, what GAINS DID YOU MAKE in the following SKILLS? - Writing documents in the style and format appropriate for chemists

No gains
A little gain
Moderate gain
Good gain
Great gain
Not applicable

Q5_6. As a result of your work in this class, what GAINS DID YOU MAKE in the following SKILLS? - Behaving as an effective team member

- No gains
- A little gain
- Moderate gain
- Good gain
- Great gain
- Not applicable

Q5_7. As a result of your work in this class, what GAINS DID YOU MAKE in the following SKILLS? - Behaving as an effective leader

- No gains
- A little gain
- Moderate gain
- Good gain
- Great gain
- Not applicable

Q5_8. As a result of your work in this class, what GAINS DID YOU MAKE in the following SKILLS? - Interacting productively to solve problems with a diverse group of classmates

- No gains
- A little gain
- Moderate gain
- Good gain
- Great gain
- Not applicable

Q5_9. As a result of your work in this class, what GAINS DID YOU MAKE in the following SKILLS? - Analyzing chemical models and draw appropriate conclusions

- No gains
- A little gain
- Moderate gain
- Good gain
- Great gain
- Not applicable

Q5_10. As a result of your work in this class, what GAINS DID YOU MAKE in the following SKILLS? - Developing testable hypotheses

- No gains
- A little gain
- Moderate gain
- Good gain
- Great gain
- Not applicable

Q5_11. As a result of your work in this class, what GAINS DID YOU MAKE in the following SKILLS? - Designing and executing experiments

- No gains
- A little gain
- Moderate gain
- Good gain
- Great gain
- Not applicable

Q6. Please comment on the specific SKILLS you feel you have gained or improved upon as a result of this class.

[TEXT FIELD]

Q7_1. As a result of your work in this class, what GAINS DID YOU MAKE in the following? - Enthusiasm about learning organic chemistry

- Not applicable
- Not at all
- Just a little
- Somewhat
- A lot
- A great deal

Q7_2. As a result of your work in this class, what GAINS DID YOU MAKE in the following? – Interest in discussing topics related to organic chemistry with friends or family

- Not applicable
- Not at all
- Just a little
- Somewhat
- A lot
- A great deal

Q7_3. As a result of your work in this class, what GAINS DID YOU MAKE in the following? – Confidence that you can understand and succeed at organic chemistry

- Not applicable
- Not at all
- Just a little
- Somewhat
- A lot
- A great deal

Q7_4. As a result of your work in this class, what GAINS DID YOU MAKE in the following? – Your comfort level working with complex ideas

- Not applicable
- Not at all
- Just a little
- Somewhat
- A lot
- A great deal

Q7_5. As a result of your work in this class, what GAINS DID YOU MAKE in the following? – Willingness to seek help from others (teacher, peers, TA) when working on academic problems

- Not applicable
- Not at all
- Just a little
- Somewhat
- A lot
- A great deal

Q7_6. As a result of your work in this class, what GAINS DID YOU MAKE in the following? - Interest in taking or planning to take additional chemistry classes

- Not applicable
- Not at all
- Just a little
- Somewhat
- A lot
- A great deal

Q8. Please comment on how this class has CHANGED YOUR ATTITUDES toward this subject .
[TEXT FIELD]

Q11_1. As a result of your work in this class, what GAINS DID YOU MAKE in INTEGRATING the following? –
Connecting key ideas and reasoning skills that I learn in my classes with other areas of my life

- No gains
- A little gain
- Moderate gain
- Good gain
- Great gain
- Not applicable

Q11_2. As a result of your work in this class, what GAINS DID YOU MAKE in INTEGRATING the following? -
Using systematic reasoning in my approach to problems

- No gains
- A little gain
- Moderate gain
- Good gain
- Great gain
- Not applicable

Q11_3. As a result of your work in this class, what GAINS DID YOU MAKE in INTEGRATING the following? -
Determining how each piece of new information or knowledge fits into the pattern of my existing knowledge

- No gains
- A little gain
- Moderate gain
- Good gain
- Great gain
- Not applicable

Q11_4. As a result of your work in this class, what GAINS DID YOU MAKE in INTEGRATING the following? -
Using a critical approach to analyzing data and arguments before I make an action plan

- No gains
- A little gain
- Moderate gain
- Good gain
- Great gain
- Not applicable

Q17. What did you gain in this class that you will CARRY WITH YOU into other classes or other aspects of your life?

[TEXT FIELD]

Q18_1. HOW MUCH did the following aspects of the class HELP YOUR LEARNING? - The instructional approach taken in this class

- No help
- A little help
- Moderate help
- Much help
- Great help
- Not applicable

Q18_2. HOW MUCH did the following aspects of the class HELP YOUR LEARNING? - How the class topics, activities, reading, and assignments fit together

- No help

A little help
Moderate help
Much help
Great help
Not applicable

Q18_3. HOW MUCH did the following aspects of the class HELP YOUR LEARNING? - The pace of the class

No help
A little help
Moderate help
Much help
Great help
Not applicable

Q19. Please comment on how the INSTRUCTIONAL APPROACH to this class helped your learning
[TEXT FIELD]

Q20. How has this class CHANGED THE WAYS YOU LEARN/STUDY?
[TEXT FIELD]

Q21_1. HOW MUCH did each of the following aspects of the class HELP YOUR LEARNING? - Attending lectures

No help
A little help
Moderate help
Much help
Great help
Not applicable

Q21_2. HOW MUCH did each of the following aspects of the class HELP YOUR LEARNING? - Being called upon to answer questions during class

No help
A little help
Moderate help
Much help
Great help
Not applicable

Q21_3. HOW MUCH did each of the following aspects of the class HELP YOUR LEARNING? - Listening to other students ask and answer questions during class

No help
A little help
Moderate help
Much help
Great help
Not applicable

Q21_4. HOW MUCH did each of the following aspects of the class HELP YOUR LEARNING? - Participating in group work during recitation

No help
A little help
Moderate help
Much help
Great help
Not applicable

Q21_5. HOW MUCH did each of the following aspects of the class HELP YOUR LEARNING? - Doing hands-on laboratory activities

- No help
- A little help
- Moderate help
- Much help
- Great help
- Not applicable

Q21_6. HOW MUCH did each of the following aspects of the class HELP YOUR LEARNING? - Making reaction maps and/or reaction lists

- No help
- A little help
- Moderate help
- Much help
- Great help
- Not applicable

Q21_7. HOW MUCH did each of the following aspects of the class HELP YOUR LEARNING? - Working on example problems given on the blackboard

- No help
- A little help
- Moderate help
- Much help
- Great help
- Not applicable

Q22. Please comment on how the CLASS ACTIVITIES helped your learning.

[TEXT FIELD]

Q23. Please comment in HOW OFTEN YOU PARTICIPATED in class discussions during lecture or recitation and HOW THE ATMOSPHERE IN THE CLASSROOM ENCOURAGED OR DISCOURAGED your participation.

[TEXT FIELD]

Q24_1. HOW MUCH did each of the following aspects of the class HELP YOUR LEARNING – Graded assignments (overall) in this class

- No help
- A little help
- Moderate help
- Much help
- Great help
- Not applicable

Q24_2. HOW MUCH did each of the following aspects of the class HELP YOUR LEARNING - Graded Sapling homework

- No help
- A little help
- Moderate help
- Much help
- Great help
- Not applicable

Q24_3. HOW MUCH did each of the following aspects of the class HELP YOUR LEARNING - Graded laboratories (wet labs and dry labs)

- No help
- A little help

Moderate help
Much help
Great help
Not applicable

Q24_4. HOW MUCH did each of the following aspects of the class HELP YOUR LEARNING - Opportunities for in-class review (given by the instructor or TA)

No help
A little help
Moderate help
Much help
Great help
Not applicable

Q24_5. HOW MUCH did each of the following aspects of the class HELP YOUR LEARNING - The number and spacing of tests

No help
A little help
Moderate help
Much help
Great help
Not applicable

Q24_6. HOW MUCH did each of the following aspects of the class HELP YOUR LEARNING - The fit between class content and tests

No help
A little help
Moderate help
Much help
Great help
Not applicable

Q24_7. HOW MUCH did each of the following aspects of the class HELP YOUR LEARNING - The mental stretch required by tests

No help
A little help
Moderate help
Much help
Great help
Not applicable

Q24_8. HOW MUCH did each of the following aspects of the class HELP YOUR LEARNING - The way the grading system helped me understand what I needed to work on

No help
A little help
Moderate help
Much help
Great help
Not applicable

Q24_9. HOW MUCH did each of the following aspects of the class HELP YOUR LEARNING - The feedback on my work received after tests or assignments

No help
A little help
Moderate help
Much help

Great help
Not applicable

Q25. Please comment on how the GRADED ACTIVITIES AND TESTS helped your learning
[TEXT FIELD]

Q26_1. HOW MUCH did each of the following aspects of the class HELP YOUR LEARNING? - The primary textbook (Loudon), including suggested problems

No help
A little help
Moderate help
Much help
Great help
Not applicable

Q26_2. HOW MUCH did each of the following aspects of the class HELP YOUR LEARNING? - Other reading materials

No help
A little help
Moderate help
Much help
Great help
Not applicable

Q26_3. HOW MUCH did each of the following aspects of the class HELP YOUR LEARNING? - Study Guide and Solutions Manual that went with Loudon

No help
A little help
Moderate help
Much help
Great help
Not applicable

Q26_4. HOW MUCH did each of the following aspects of the class HELP YOUR LEARNING? - Klein's Organic Chemistry as a Second Language (optional)

No help
A little help
Moderate help
Much help
Great help
Not applicable

Q26_5. HOW MUCH did each of the following aspects of the class HELP YOUR LEARNING? - Additional readings that I completed in other texts or on websites

No help
A little help
Moderate help
Much help
Great help
Not applicable

Q26_6. HOW MUCH did each of the following aspects of the class HELP YOUR LEARNING? - Online materials (other than teacher-provided online notes or presentations)

No help
A little help
Moderate help
Much help
Great help
Not applicable

Q26_7. HOW MUCH did each of the following aspects of the class HELP YOUR LEARNING? - Online notes or presentations posted by instructor

No help
A little help
Moderate help
Much help
Great help
Not applicable

Q26_8. HOW MUCH did each of the following aspects of the class HELP YOUR LEARNING? - Visual resources used in class (i.e. PowerPoint, slides, models, demonstrations)

No help
A little help
Moderate help
Much help
Great help
Not applicable

Q26_9. HOW MUCH did each of the following aspects of the class HELP YOUR LEARNING? - Optional worksheets, such as spectroscopy and POGIL problem sets

No help
A little help
Moderate help
Much help
Great help
Not applicable

Q26_10. HOW MUCH did each of the following aspects of the class HELP YOUR LEARNING? - Optional animated online lectures

No help
A little help
Moderate help
Much help
Great help
Not applicable

Q27. Please comment on how the RESOURCES in this class helped your learning.
[TEXT FIELD]

Q28_4. HOW MUCH did each of the following aspects of the class HELP YOUR LEARNING? - Explanation of how the class activities, reading and assignments related to each other

No help
A little help
Moderate help
Much help
Great help
Not applicable

Q28_5. HOW MUCH did each of the following aspects of the class HELP YOUR LEARNING? - Explanation given by instructor of how to learn or study the materials

No help
A little help
Moderate help
Much help
Great help
Not applicable

Q28_6. HOW MUCH did each of the following aspects of the class HELP YOUR LEARNING? - Explanation of why the class focused on the topics presented

No help
A little help
Moderate help
Much help
Great help
Not applicable

Q29. Please comment on HOW the INFORMATION YOU RECEIVED about the class helped your learning.
[TEXT FIELD]

Q30_4. HOW MUCH did each of the following aspects of the class HELP YOUR LEARNING? - Interacting with the instructor during class

No help
A little help
Moderate help
Much help
Great help
Not applicable

Q30_5. HOW MUCH did each of the following aspects of the class HELP YOUR LEARNING? - Interacting with the instructor during office hours

No help
A little help
Moderate help
Much help
Great help

Not applicable

Q30_6. HOW MUCH did each of the following aspects of the class HELP YOUR LEARNING? - Working with teaching assistants during class

No help
A little help
Moderate help
Much help
Great help
Not applicable

Q30_7. HOW MUCH did each of the following aspects of the class HELP YOUR LEARNING? - Working with teaching assistants outside of class

No help
A little help
Moderate help
Much help
Great help
Not applicable

Q30_8. HOW MUCH did each of the following aspects of the class HELP YOUR LEARNING? - Working with peers during class

No help
A little help
Moderate help
Much help
Great help
Not applicable

Q30_9. HOW MUCH did each of the following aspects of the class HELP YOUR LEARNING? - Working with peers outside of class

No help
A little help
Moderate help
Much help
Great help
Not applicable

Q30_10. HOW MUCH did each of the following aspects of the class HELP YOUR LEARNING? - The chemistry resource room (1213 FFSC)

No help
A little help
Moderate help
Much help
Great help
Not applicable

Q30_11. HOW MUCH did each of the following aspects of the class HELP YOUR LEARNING? - Walk in tutoring (Tuesday and Thursday nights, Sunday afternoon)

No help
A little help
Moderate help
Much help
Great help
Not applicable

Q30_12. HOW MUCH did each of the following aspects of the class HELP YOUR LEARNING? - MAPS study groups and review sessions

- No help
- A little help
- Moderate help
- Much help
- Great help
- Not applicable

Q30_13. HOW MUCH did each of the following aspects of the class HELP YOUR LEARNING? - One-on-one peer tutoring (free)

- No help
- A little help
- Moderate help
- Much help
- Great help
- Not applicable

Q30_14. HOW MUCH did each of the following aspects of the class HELP YOUR LEARNING? - Private tutor (paid a fee)

- No help
- A little help
- Moderate help
- Much help
- Great help
- Not applicable

Q30_15. HOW MUCH did each of the following aspects of the class HELP YOUR LEARNING? - ARC time management or study skills sessions (2nd floor of academic advising building on East Campus.)

- No help
- A little help
- Moderate help
- Much help
- Great help
- Not applicable

Q31. Please comment on how the SUPPORT YOU RECEIVED FROM OTHERS helped your learning in this class.
[TEXT FIELD]

Q12_1. Please characterize your future plans at this time: I plan to major in chemistry

- No
- Yes
- Not applicable

Q12_2. Please characterize your future plans at this time: I plan to attend a health-related professional school (medical, dental, vet, pharmacy, etc.)

- No
- Yes
- Not applicable

Q12_3. Please characterize your future plans at this time: I plan to attend graduate school in the natural sciences

- No
- Yes
- Not applicable

Q12_4. Please characterize your future plans at this time: I plan to gain employment as an engineer

No
Yes
Not applicable

Q13. Please comment on your future plans here, especially if none of the above apply.
[TEXT FIELD]

Q14. Have your future plans changed since you entered Duke University?
No
Yes
Not applicable