

Metacognition

What Is Metacognition?	1
How to Use Metacognition	2
Practice in This Course	2
Metacognition Lab-related entries must include:	2
Course-Specific Reflection must include (these can be rare or frequent):	3
Entries (Start here after reading background above!)	3
Date and Lab/Course Topic	4

Intro to Metacognition

What Is Metacognition?

Metacognition is thinking about thinking, typically to improve or control thought. Students with better metacognition perform better in school, work, and social groups. Here is an example of how living with metacognitive skills can impact your life:

When Rollo was in college, he had difficulty paying attention in lectures. He asked his friends what they did to pay attention in class. He tried their advice of taking notes, drinking lots of caffeine, recording the lecture, but found they only helped a little. Eventually, Rollo realized he didn't care about what the professor was saying, but he did care about how he could apply the concepts to his personal projects. This made the lectures interesting, and helped him learn the material.

Rollo applied metacognition by: 1. Identifying the problem: He couldn't pay attention, 2. Learning: he talked to his friends, 3. Trying: doing new things, 4. Reassessing: reviewing what worked and why.

It's easy to miss how mistakes relate to each other. Struggling to do your homework? It might be related to motivation, attention, or time management. You can promise yourself to 'try harder next time' but unless you take time to recognize the pattern and look for solutions, the underlying problem will remain. Understanding why you're making mistakes and addressing them early helps you improve in many aspects of life, including this Circuits course. Metacognition takes practice, so in this course we'll practice explicitly. However, we also encourage you to practice this in other classes and in life in general.

How to Use Metacognition

1. Identification: What do you want to do? Have you done this in the past? What is this most closely related to? How did it go? Does this happen a lot? What about in other parts of your life?
2. Learn: Think about what happened last time. Look up suggestions online. Ask a friend. Ask a mentor.
3. Try: Try whatever you think is best.
4. Reassess: Did it go better or worse than last time? Why do you think that? What are you going to do differently next time?

Practice in This Course

Metacognition is helpful, but only if you actually practice and apply it. As such we're incentivizing these in this class. Keeping a regular journal that is complete will be counted as a significant part of your participation points. You need the following:

Journal Entry Type	Frequency	Submission
Lab-related Entries (Proof of Skills)	At least 1 entry about your Skill Development, you can also comment on iteration throughout the semester to get these skill right!	Check Dates on Gradescope
Lab related Entries (Proof of Concepts)	At least 3 Entries per lab for a total of 9 entries in the course.	Check Dates on Gradescope
Course-specific reflections (Quiz or Assignment grades)	No minimum or maximum	Optional Submissions on Gradescope
Course-specific reflections (In-Class Activities or Speakers)	Every guest speaker, also will be prompted when activities happen	Professor will add dates on Gradescope during class to submit

An online Gradescope quiz will be created for submissions. You can submit a document pdf, video, audio, or .docx as a supplement if needed as well.

Metacognition Lab-related (Proof of Concept or Proof of Skill-related) entries must include:

- The date
- What task are you doing?
- What is something new worth trying?

After you're done, append to the end of the entry:

- How did it go? And how do you know?
- Did your new strategy work?
- What else do you need to learn?
- What are you going to try next time?

- Comment on the team dynamics with your partners
 - **Rate your own contribution to the work.** (Comments like I'm working hard and engaged. I'm a team leader, I'm struggling to keep up...are all valuable self-reflections) Were you on time with assignments? Did you help troubleshoot? What tools did you try?)
 - **Comment on the team dynamics** (Is it going smoothly? Did you learn something from someone else on your team? Does a teammate need help? Is a teammate missing in action?)

Course-Specific Reflection must include

- The date
- Topic and/or name of content
- Plus
 - Anything that was great about an exercise, class, or assignment
 - *(Be honest, hurting feelings or gaining some advantage by being nice is not possible here!)*
 - Anything you learned that you didn't know
 - Anything you knew but really resonated with you and you got a deeper understanding

- Delta
 - Anything that could be improved
 - Anything statement made you disagreed with
 - Any question you have that wasn't addressed that should be addressed
 - Anything you were confused about or was too high level to understand
- Kaizen
 - One thing you plan to do or take action about because of the in-class exercise or topic
 - Look up a definition
 - Look up the research page
 - Review material from a class you already took
 - Talk to Sawyer, TA, or other professor

Date and Lab/Course Topic

(please continue to make this heading 3 and update table of contents for easy navigation)

[See Examples of Metacognition Journals from a previous semester!](#)