

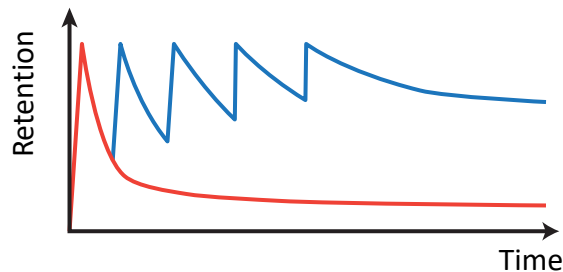
Spaced Study: Crush the Cram

Spacing out study sessions (sometimes called “distributed practice”) is a much more effective way to learn compared to cramming (or “massed practice”). When you space out study sessions, you remember more information for longer periods of time. Hour-for-hour, you will retain more information by studying in several sessions than by cramming—more bang for your buck! Below, you’ll find information about why distributed practice works and some ideas for implementing it.

The forgetting curve

Cramming: Quickly acquired, quickly forgotten

The **red curve** in the plot to the right is called the Ebbinghaus Forgetting Curve. It shows what happens to retention of information over time. When you study, you take in new material, so retention spikes upward. As soon as you stop studying, however, you begin to forget and retention plummets downward and levels off.



Spaced study

If you study regularly, your retention over time will follow the **blue curve**. After studying, you will forget and retention will drop, but it will increase again in subsequent study sessions with extra benefits—you’ll forget less and remember more!

Benefits of spaced practice

- Improved retention – notice that retention drops faster in early study sessions compared to later study sessions.
- Better understanding – when you have better retention of information, it will be easier to apply that knowledge in different ways.

Schedule and sleep

Plan dedicated study time.

- Plan study sessions for each course you’re taking. As a general rule, spend 2-3 hours of studying for every hour of class.
- In each session, make a small goal to work toward, intentionally minimize distractions, and use active studying techniques.

SLEEP!



- Sleep is critical. It is the reason distributed practice works! You create and strengthen memories when you sleep (consolidation).
- Prioritize sleep by budgeting time for it—at least seven to eight hours per night.

Pivot from pitfalls

Spaced practice is easier said than done.

- Spaced practice requires effort. For example, going over vocabulary flash cards a second time will feel easier if you do it immediately after going over them the first time compared to the following day. Know that this effort is a good thing! It means you’re learning.
- Procrastination may inhibit your best intentions to study regularly. Identify areas of procrastination and how to address them using our procrastination worksheet [Link].



References and further reading

- Carpenter, S. K., & Agarwal, P. K. (2020). *How To Use Spaced Retrieval Practice Boost Learning*. <http://pdf.retrievalpractice.org/SpacingGuide.pdf>
- Doyle, T., & Zakrajsek, T. (2013). *The New Science of Learning: How to learn in harmony with your brain*. Stylus Publishing.
- Weinstein, Y., Sumeracki, M., & Caviglioli, O. (2019). *Understanding How We Learn*. Routledge.