# How to ace exams in Professor H.’s class

Question: Professor H., I hear your exams are impossible. What is the best way to prepare for your exams?

Answer: There are many different study methods, but here is the method that I think works best. Take each topic and write down as much information about it as you can remember. The writing part is important; research consistently shows that by physically writing things, you are more likely to commit them to memory. After you write down what you can remember, then go into your notes and the lecture slides to fill in the gaps that you missed. That will be the full review sheet that you should study from. At this point, you can type up your review sheet to study from.

## Other tips:

1. You only have 60 minutes to answer 50 questions. You will not have enough time to look up every question, so you do need to study a bit.
2. Don’t wait until the night before the exam, start early so you can create the review sheet to study from.
3. Don’t try to review all the slides in the lectures at once. Your short-term memory can only hold so much and there is too much information in the slides for you to remember at once. You will get overloaded and very little of the information will make it to long-term memory. So, take it slow, with frequent breaks.
4. Breathe.

# Exam 4 study guide

* **Lecture 15 - Earthquakes**
  + Causes
  + Types of fault movement
  + How to locate an earthquake
  + Intensity and Magnitude scales
  + Characteristics of the different seismic waves
* **Lecture 16 - Revisiting Plate Tectonics**
  + Earth’s magnetic field and evidence for changes
  + Wilson cycle basics, what is geologically happening at each stage and modern-day equivalents
  + How continents grow larger
* **Lecture 17 - Rivers and flooding**
  + Runoff vs infiltration

Most precipitation that falls on land enters the soil (infiltration) or remains at the surface and moves downslope as runoff

A screenshot of a computer

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* + Drainage Basins

-Areas that provide the runoff are called drainage basins • Different areas of runoff that meet will form streams/rivers

• Small streams, called tributaries, drain into larger streams

Mississippi River drainage basin • Biggest drainage basin in the US • MR is fed by many smaller rivers (tributaries)

* + Discharge and factors that affect it

-Discharge – amount of water flowing (volume/unit time)

A diagram of a river

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* + Meanders
  + Braided • Steep gradient and/or high sediment load

Meandering • Shallow gradient

-Meandering rivers have large bends (meanders)

-Erosion occurs on the outside of the bend (cutbank), deposition on the inside (point bar)

* + Concept of a 100-year flood

A 100 year flood means that a flood of that size has a 1% chance of occurring every year

* **Lecture 18 - Climate**
  + Climate vs weather
  + Atmospheric composition

-carbon dioxide, methane, water vapor, others

* + Greenhouse gasses
  + A diagram of a graph

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  + Albedo

Albedo - “reflectivity” of different Earth surfaces • Light surfaces reflect more energy, dark surfaces absorb more energy

* + **Natural causes of climate change**
  + Plate tectonics • Volcanoes • Solar variability • Earth’s orbital patterns • Others
  + Milankovitch Cycles and Earth orbital patterns (eccentricity, obliquity, precession)
  + A screenshot of a diagram of the earth

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  + Recent climate change

We know about Earth’s climate history from many different pieces of evidence • Ice cores • Fossils • Sediment • Tree rings • Many others