

Using MOOCs to Fill In Your Weak Spots | GradHacker

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By

[Hanna Peacock](#)

Hanna Peacock is a PhD student in Cardiovascular Sciences at the KU Leuven. You can find her on Twitter [@hannapeacock](#) or at her [website](#).



As a Biomedical Sciences major, I completed the two required “Physics for the Life Sciences” courses during the first year of my undergrad, and never considered those concepts again. Until now. I’m doing my doctorate in cardiovascular science, and the physics of blood flow has become an important element of my experiments. The little I remember from those two courses is far from sufficient for my current project. I’m now trying to teach myself the basics of fluid dynamics so I can properly understand and explain my own project.

It is obvious that there is no perfect suite of courses to take during your undergraduate degree that will prepare you specifically for your grad school projects. Inevitably we find gaping holes in our knowledge and skills, and wind up irritated with our younger selves for shying away from seemingly *boring* or *useless* courses during undergrad. [Perhaps you even have an interest outside of your project](#) (*gasp!*), and wish you had taken an elective course or two on it. Now your undergrad is done, and it’s too late to take those courses.

Auditing a course might be an option, but would require you to fit six hours of inconveniently timed lectures around experiments, meetings, and other obligations.

So, what can you do to fill in your weak spots?

The answer is MOOCs: Massive Open Online Courses.

MOOCs are large-scale online courses offered (usually for free) to anyone who is interested. Many of the courses are produced by well-respected universities. They cover topics ranging from introductory calculus, statistics, and coding, to philosophy, to palaeontology. *If it exists, there is a MOOC of it. No exceptions. ;)*

While you may have come across distance education courses that were awkward, last-minute adaptations of classroom lectures, **most MOOCs were designed to be online courses**. The formats of programmes vary, with some offering video lectures, assignments, readings, tests, etc. Coursework is usually self-graded, peer-graded, or computer-graded, since there are large numbers of students participating. Some MOOCs are perpetually running, and you can follow the material at your own pace. Others have start dates and encourage you to keep up with small assignments. Depending on your schedule and intrinsic motivation, you can choose the course format best suited to you.

MOOCs are less intimidating, when compared signing up for an undergraduate course. MOOCs are targeted at a general audience, and so they don't assume you have background knowledge. Because of this, they are also typically more focussed on the "bigger picture" than undergraduate courses are. While some MOOCs give grades, they are just for your own information, and won't end up on your transcripts. Instead, you decide when you have learned enough. You can stop part way through a course and suffer no penalty. Some courses will offer a certificate of completion at the end, which may be useful. And, of course, since they are online, you can take them in secret if you are shy about your inexperience with the topic (see: [imposter syndrome](#)).

But, don't be shy about talking to your advisor or colleagues. [Convincing your colleagues or friends to join you in the course can help you persist and complete the course](#). And, no decent professor will scorn a student working to improve their knowledge. If you can muster the courage to articulate this gap in your knowledge to your supervisor, telling them will help you commit to completing the course. **Your supervisor can also be a great support in choosing a course** that will be most relevant to your work. For example, I was only able to find [a useful MOOC to learn about how fluids like blood work](#) when my supervisor told me to search for "Transport Phenomena".

Finding a MOOC with the scope, appropriate pacing, and format for your needs takes effort. While most MOOCs are free, you will want to double check the price before signing up. It's also important to consider your own learning style, and whether you prefer reading or watching lectures or doing assignments. Most MOOCs will have a description of the number of hours of work per week you can expect, and how the material will be presented. Some universities have listings of their own MOOCs. Better still, there are a number of websites listing and supporting MOOCs from multiple universities, and courses built by companies like Google and Facebook. Check out [EdX](#), [Coursera](#), [Udemy](#), [Khan Academy](#), [Udacity](#), [Future Learn](#), and [Open2Study](#). You can also find MOOCs on [iTunes U](#).

Browsing through thousands of courses may even inspire you to learn about something you've never considered.

What MOOC topics interest you? If you have already participated in a MOOC, would you recommend the course you took?

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