ZOOL 401 Course Profile

The course description for Zoology 401 (**An Introduction to Invertebrate Zoology**) can be found here.

Generally offered in: Winter semester

Prerequisite(s): Biology 371

Antirequisite(s): N/A

Answered by Dr. Mindi Summers

In your own words, can you give a brief summary of what this course is about?

ZOOL 401 explores the biodiversity of invertebrates focusing on the major phyla, which includes groups such as jellyfishes, octopuses, squids, clams, starfishes, and sea urchins. It also explores some of the less familiar groups such as sponges, corals, leeches, worms, and many parasites. We explore these different animals' ecology (i.e., where they live, what they eat, how they reproduce, and their behaviour), as well as their structure and function, and topics related to conservation and how humans interact with them.

What is the main skill you want students to take away from this course?

There are a few different types of skills that students will be gaining from this course. One set of skills is laboratory and research skills, which are important for careers in biology. Students get to spend time practicing scientific observation of live, preserved, and sectioned organisms. Students will spend time doing scientific drawings and descriptions, as well as dissections. They will also gain skills in scientific record-keeping, such as how to make accurate scale bars, labels, and identifications. Students will also get a lot of practice with using dissecting and compound microscopes via virtual simulations. Another research practice that students will learn is observation skills for animal behaviour via videos. In addition, students will also develop communication, teamwork, time-management, and reflection skills. By the end of the course, students will be well-versed in communicating both verbally and through writing about invertebrates.

What aspect of the course do you think students struggle with the most?

One part that students seem to be the most apprehensive about but seem to enjoy by the end of the course is having to fill out their own laboratory notebook from scratch. For the laboratory component of the course, students are required to fill a blank notebook with their observations and record-keeping. At the start of the term, students feel quite overwhelmed being confronted with just a blank piece of paper to ZOOL 401 COVID-19 edition - Course Profile created in Fall 2020 start recording their information on, but that is very similar to what you would experience in a career in biology or in grad school. By the end of the first week, students begin feeling more comfortable with it, and halfway through the semester, they are really enjoying the opportunity to organize their information in a way that makes sense to them.

What can students do to be successful in this course besides attending lectures?

Being successful in the course requires you to become excited about lots of different invertebrates. One of the biggest components of what students can do to be successful is time management. Each week we cover a different phylum of different animals and so students should be ready to talk about a specific phylum each week. For example, if we are talking about Porifera (sponges), you should be ready to talk about Porifera and think about Porifera in lecture and in the lab, because next week we are moving on to Cnidaria, which is jellyfish and corals, and they have different body plans and lifestyles. I have a study sheet available to students at the end of the week, which students have found very helpful in the past.

Does this course have a lab or tutorial component? If so, what should students expect from that component of the course?

This course includes a lab component. Labs included a mixture of dissections, live animal observations, and observations of preserved and sectioned specimens. You will gain practice in using and working with both dissecting and compound microscopes and get to make scale bars and practice scientific record keeping.

What do you think is the most effective way that students can prepare for an examination in the course?

I recommend reviewing lectures, labs, and assignments in a way where you synthesize the information. In other words, instead of only thinking about lecture content, make connections and combine your notes together. I have created a visual study guide handout that students have found to be helpful as a way to do this. The examination also consists of stations, so practicing applying both knowledge and skills within a timed amount of time is also very important. The peer mentors organize an exam review for you to get used to the format and practice with each other - I highly recommend attending and engaging as though you are taking the exam.

Aside from the textbook and lecture notes, are there any other resources that you recommend students use?

Yes! I have included a list of websites, videos, and other resources to explore invertebrate zoology in the course outline. You will also have the opportunity to find additional resources to share with other students on invertebrate conservations and applications as part of weekly discussion board posts.

Do you have any other advice for incoming students taking this course?

One of the best ways to engage in the course is to spend time exploring invertebrates for fun outside of the lectures and labs. I try to assign assignments so that you are looking for videos and podcasts to engage in the material outside of lectures. The more exposure you can get to see these neat animals that you probably have not encountered before, the more you will be able to visualize them and understand what they do. Another thing that I have as part of this course is an invertebrate book

and movie club to practice talking about different invertebrates! The more you listen and hear about invertebrates, the more familiar they become.

What is your favourite part about teaching this course?

One of my favourite parts about teaching this course is the invertebrate book club and getting to hear what students read and what they think about different books. For this year, I am expanding the book club into a book, movie, and podcast club. Another component of the course that I have really enjoyed is the class representative meetings. Class representatives are students who volunteer to meet with me once a week to share their experience with the course and ideas. A lot of the ideas and activities that are a part of this course come from these meetings and from student input.