



UNIVERSITY OF TORONTO

# PHARMACOLOGY & TOXICOLOGY

STUDENT ASSOCIATION

## Course Commentary 2013-2014

*A guide to surviving pharmacology & toxicology!*

### Courses Included

PCL102	PCL469
PCL201	PCL470
PCL285	PCL471
PCL302	PCL472
PCL362	PCL473
PCL365	PCL474
PCL376	PCL475
PCL389	PCL477
PCL402	PCL481

This Course Commentary is a compilation of course-specific tips from previous students. For the numerical breakdown of the course evaluations, please check out the "Faculty of Arts & Science Course Evaluations Feedback" link on <https://portal.utoronto.ca>. Please contact other student unions regards to courses under other codes.

## PCL102

### **Course evaluation comments:**

Students found the diversity of topics covered in the course to be very interesting. Science students found a large portion of the material to be a review of basic concepts they learned/are learning in BIO230 and high school biology, as well as a very basic and interesting overview of the drug industry and the process of drug discovery. Non-science majors found that the lectures geared more towards students with a science background. As well, they also noted that they appreciate the use of many analogies to explain the more scientific concepts. Many students have mentioned that they would have liked a more dynamic and interactive teaching method (e.g. more tutorials), but that they appreciated the level of enthusiasm in the delivery of the lectures. Students appreciated the external resources and readings for this course. They found it to be very stimulating and relevant. They enjoyed how the course gave real world applications to the course material.

# PCL201

## **Course evaluation comments:**

This course focuses on basic pharmacokinetic principles, as well as certain other sub-disciplines in pharmacology such as pharmacoeconomics. Students appreciated the variety of material and the level of depth in presented in this course. However, some have mentioned that more focus on the background material relating directly to the course would have been beneficial. Some students found the material to be dense and memory intensive but that material recurs throughout sections of the course. They also found that the pacing for certain sections—particularly in the section for pharmacoeconomics— to be fast and that it is important to keep on top of the material. Students appreciated the tutorials and found the extra exam review sessions to be helpful. As well, they appreciated the use of the online discussion board as a medium for asking questions.

## **Quotes and Tips from upper years:**

The definition of some terminology is very specific. Make sure you are able to define these terms with the specific language required.

Practice the math (pharmacokinetic) problems—especially conversion between units of measurement! It might seem simple but it can take time to convert between each unit if you're unfamiliar with them and that is time you cannot spare during an evaluation. The math questions on the first midterm take up time. Make sure to budget your time accordingly. Do not spend too much time on the multiple choice questions. Also, do not just memorize the variables of each formula. Make sure you actually understand what they mean.

Ask for clarification if you're unclear with a practice problem since at times, the basic solution steps are omitted.

Review and practice past tests to get an idea of the level of detail you need to know, the evaluations focus on material covered by the lecture.

The textbook gives great clarification/details that will help you thoroughly understand what is going on. It is also useful to review the lecture slides the day or the day after the lecture and to pay attention to the details.

The tutorials are very helpful. If you can't make all of them, at least attend the ones where practice quiz questions will be taken up.

Make mnemonic tricks for the CYPs.

The questions asked on midterms tend to be very analytical in nature. They do not test your ability to memorize but rather your ability to understand the lessons.

Make sure you understand the concepts really well, because it will help you in later courses--they expect you to know this stuff in third and fourth year. Make sure to get the basics down. As well, everything is related. Don't forget what you learned just because the midterm is finished!

Listen attentively and write good DETAILED notes. You're expected to know very specific details. If you can, re-write your notes in detail by re-listening to recordings.

Know the details about the drugs that are constantly mentioned (e.g. therapeutic effect, physical properties).

The basics of this material lie in physiology and biology. It may be beneficial to quickly look over your notes from previous PSL and BIO classes.

## PCL285

### **Course evaluation comments:**

This course teaches one to critically evaluate scientific literature and media relating to the drug industry. As well, the course gives students the opportunity to practice their essay writing skills and presentation skills. While students found the lectures and class discussions to be stimulating and relevant to pharmacology, they found that the lectures tended to be too biased against pharmaceutical companies. Some students find the course very similar to ENG100\*\* and that the concepts are reminiscent of high-school level English courses. As well, some students wished that essay writing had been geared more towards writing a scientific manner. Students found this practice in critical thinking to be excellent but wished that the course was less biased and one-sided with regards to the politics being discussed.

\*\*Note: ENG100 and PCL285 are exclusions

### **Quotes and Tips from upper years:**

Don't procrastinate your work. Doing the readings and handing in assignments on time is critical to get an excellent grade.

Help is readily available from your professor and TA so utilize them to the best of your abilities. Feedback from the TA is very helpful so write your rough drafts seriously. As well, edit your work multiple times. It's best if you also get your peers to edit. Sometimes, your mind tends to fill in the inconsistencies of your paper because you've become so familiar with the text, so it's very useful to get a fresh pair of eyes to look over your work. Also, follow the outline process. Your essay is more or less completed once you've finished your outline.

Focus on having a clear, concise argument with one point per paragraph that is well supported. This always trumps fancy prose.

Always go to class for the participation marks, and write good, coherent, solid essays. Active participation in the peer editing sessions held in class helps and take every opportunity to seek advice from the prof or TA's.

# Course Commentary

## 2013-2014



The textbook for the course is valuable--it gives a lot of grammar rules and a full guide to citations.

Actively listen and participate in class. The discussion helps guide you to possible points that you can argue for your essays and short assignments.

Pick topics that you are interested in for your paper. You'll be researching extensively on them and working on the paper for a prolonged period of time.

Do ALL the assignments and stay on top of the writing--even the ones worth just 1 or 2 marks. They add up.

## PCL302

### **Course evaluation comments:**

This course focuses on basic pharmacodynamic principles and covers a diverse set of topics that students enjoyed learning about. Particularly, many students seemed to enjoy the section on drug transporters. However, while students found the lectures to be generally interesting and well-delivered, some feel there are discrepancies between the level of difficulty in different sections during tests/exam and the course to be material-heavy. Some students felt that for test and exams the level of detail expected was quite specific.

### **Quotes and Tips from upper years:**

Preview material before class, continually review all material weekly, buy and do past tests and keep a list of all drugs: write down structure, receptor, mechanism of action and side effects

Professors put emphasis on lecture slides that are important. It is suggested that students know and understand all the details of those slides.

Make good and detailed notes. Find the similarities between mechanism and reactions on top of memorizing them. Lectures are definitely worth re-listening. It's easy to lose focus or miss what the prof said when taking notes. The best thing to do is to add to the notes u took in class when re-listening to the lecture.

Leave lots of time to study and memorize the material before tests – there are lots of mechanisms to know.

Never assume you know something until you try explaining it. If you can actually explain the concept to somebody and be able to write it out, then you know it.

Time yourself when doing practice tests to get an idea of how to pace yourself.

During the test: budget your time well as there is a lot of writing and a tough time limit!

# Course Commentary 2013-2014



Practice on past tests and think about where the marks are coming from in an answer, and get to the point in your answers because the questions are specific in what they are looking for.

It also helps to review your answers and check with the TA or the professor once you get your mid-term back.

Follow the instructions and answer the questions thoroughly when doing the final writing assignment.



## PCL362

### **Course evaluation comments:**

Students found the material taught in class is interesting. Many appreciate the "in the news" component which helps to connect the lectures with the real world events. Many respondents raised the concern that the evaluations were not truly reflective of students' understanding on the subject. Some students believed that more specific and detailed instruction on the tests would help students to know the intention of the testers.

### **Quotes and Tips from upper years:**

Memorization is key for this course so manage your time well. Past students found the marking scheme of the midterms was strict. Past students suggested understanding diagrams and graphs (and understanding the big picture) but also you must be able to reproduce them on a test. Students also found that the past tests were predictable but stated not to study from them as they change every year (see below). Attending class and listening to the professor was also advised since the professor is a good lecturer and he would indicate which material would or would not be on the midterms.

Focus on what the professor emphasized on as important. Use the past exams as a reference not as a rule: just because a question always appears in the past exams does not mean it will appear on yours. Same is true when if a question never appears in the past exams, it does not mean it will appear on yours. If you did not study a section and it appears on your test, you may end up losing 50% of the marks on the midterm as each question is worth a lot.

# PCL365

## **Course evaluation comments:**

Some students found the work load to be quite high and that the requirements for the first two lab reports are not very specific and that "trial and error" helps to figure out what is required. Most students found the course to be a remarkable learning experience, even if the course itself is pretty labour-intensive. As well, students appreciated how quickly they got a response when they emailed in questions.

Some students wished that the midterm was not worth as much as the final, because they find that they have a better overall grasp of the material at the end of the school year as opposed to during the December midterm.

## **Quotes and Tips from upper years:**

Do not procrastinate on lab reports – get started on the background and methods sections ASAP.

Read feedback from the TA and don't be afraid to ask them (or the Prof) questions about the lab report.

Be concise! Don't go over the page limit but also make sure figures and graphs are labeled properly and explained.

Know the background of topics well and how the lab techniques work – they will come in handy!

Make sure that you understand all the steps of each lab before the lab starts. You'll do better in the lab, on quizzes, and have a better understanding of how to do the lab report.

## PCL376

### **Course evaluation comments:**

Students understand the importance of the material for their future career. However, many found the pace of lecture is slow at the beginning and becomes faster near the end where more complex concepts such as regression are taught. Many students found that assignments help their understanding of the material and would appreciate more problem solving based tutorials. Also more sample questions from the instructors would be helpful to prepare students from the evaluations.

### **Quotes and Tips from upper years:**

Make sure to attend lecture, do not underestimate the course. The beginning of the course may seem slow and easy but the pace become very fast and there's a lot of material condensed into the last sections of the course, can get overwhelming if you don't stay on top of your work or are very unfamiliar with statistics. You might do better if you have some previous experience with a stats course.

I found listening to the recording helped because the prof sometimes tends to repeat/emphasis things he thinks are important. Demonstrations on how to use the software required for assignments are done in-class – but it's good to practice on GraphPad or SPSS if you have access to it and will make the assignments more manageable.

Sometimes, material that is specifically from the unassigned textbook homework shows up so it might be beneficial to at least glance over these questions.

This is essentially a math course and the key to success is practicing a lot of the questions. As well, do any and all practice questions provided by the instructor so in order to familiarize with the language used.

Go to the professor's office hours. It's very helpful with regards to getting clarification and obtaining a thorough understanding of concepts.

I found re-listening to the lecture helped although some of my peers preferred reading the text book. The reason I found listening to the lectures helped is that after the

# Course Commentary

## 2013-2014

midterms I often realized some concepts that were briefly mentioned in the workbook and emphasized in the lecture were on the midterm (the professor tend to repeat/emphasis things he thinks are important during lecture). If I have missed that I would not know how to do the questions.

Make sure you word everything properly/make sure you know what the question is asking. Even if the term is defined in a rather loose manner during lecture, the marking scheme used has very specific terminology. The assignments and quizzes help in understanding concepts. However, note that they do not reflect the typical format of the exams.

## PCL389

### **Course evaluation comments:**

Students enjoyed the interactive nature of the lectures as well as the heavy emphasis for critical thinking in this course. They found that the small class size lent to an intimate atmosphere that was conducive for learning. Many found the class debates to be very fun and educational. As well, students appreciated the ability to practice their presentation skills in this course.

Students find that guest lectures are interesting, and the wide range of material is good, although there were also comments that due to the variety of topics covered, the material became too disjointed. As well, due to the interactive nature of the class, some students had difficulty taking down notes for certain lectures because they were focused on actively participating in the discussion. Additionally, students found the small writing assignments (reflection papers) to be challenging.

Students found the service learning portion of the course to be a great meaningful learning experience.

### **Quotes and Tips from upper years:**

Go to class and participate in the discussion - this is a common tip shared by almost all respondents to our survey. Participation constitutes a portion of the overall evaluation, therefore it is highly encouraged.

Also organize and plan your debate with your team early and practice together.

There are lots of opportunities to do well in this course. The small reflections are fun to do, and use the constructive criticism provided by Dr. Arnot and the TA to improve your final copy.

Do not be afraid of voicing out your opinion. There is no right or wrong answer, by participating in discussions, you not only get participation marks, but also get to put your thoughts into perspective. Many people struggled with the reflection assignment; don't be afraid to talk to Dr. Arnot or the TA about it!

## PCL402

### **Course evaluation comments:**

This course is new (launched in spring 2013) and focuses on basic concepts of drug development. Students found the material to be heavy on applied learning. As well, many students found the interactive nature of the class to be enjoyable.

Additionally, some students found the due dates for evaluations to be too condensed in one time period, and that the expectations from these evaluations are not specific enough.

### **Quotes and Tips from upper years:**

Follow the rules. Take every restriction (such as the maximum amount of words etc.) seriously.

Check the online resources for how to do the assignments that you're being given. You're expected to go beyond the example PDF. It is impossible to go over the top with this course.

I found highlighting important parts in your document, adding graphs, logos, contact information, disclaimers-just like a professional document- really helps.

Participate and reflect on what is said in class.

## PCL469 and PCL470

### **Course evaluation comments:**

(PCL470) Some students found that lessons do not flow very well from lecturer to lecturer but many enjoyed the variety of the course material. As well, some students felt that the amount of material in each lecture could be overwhelming and that it is very important to keep up with the coursework.

### **Quotes and Tips from upper years:**

There are many opportunities for participation marks - pay attention in class and make sure you've looked over the reading materials. Take good notes on the readings because they will be on the final exam. Take time to do the writings. Read the regulations, write, read the regulations again, review.

Try to make tables to help summarize and connect the information and do not leave things to the last minute – students found it helpful to keep up with the material every week, because in the end it ends up being a lot to memorize.

Choose your writing assignment topic carefully and get started early. The written assignments are marked pretty hard, so finishing early and giving yourself lots of time to edit is a good idea.

Get involved in the small group sessions and do not forget the online quizzes.

Study every day! I put the lectures on my iPod so that I could listen to them when I went on runs or before bed or make cue cards for the drugs that I would memorize while waiting for the subway etc.

One course you definitely don't want to cram for - keep up with your lectures and review ahead of time. Don't be shy in the small group sessions.

# PCL471

## **Course evaluation comments:**

Students wished that expectations for lab reports to be given more clearly and be given more specific criteria.

Students thought it was an excellent opportunity to gain lab experience and to practice working in groups.

## **Quotes and Tips from upper years:**

Start writing the papers early (like, actually) and check your work before submitting it.



## PCL472/474

### **Quotes and Tips from upper years:**

Communication is key. Communicate with your lab members and build a friendly rapport - you can offer to help out others as well. Communicate with your prof, and don't be afraid to ask questions if you're unclear about something. Enjoy gaining lab experience and be ready to learn things on your own, the course will give you some insight into what grad school will be like. Finally, don't start the final thesis in the last few weeks! The introduction and methods sections can be written long before the end. Use the writing skills you learned from your lab courses to put out a good paper.

### **How to Choose a Prof:**

Choose a lab based on a research topic you're interested in - you don't want to write a lengthy thesis on something you aren't enthusiastic about. Some profs will work directly with you, and others will take a hands-off approach. Agreeing on a time commitment with the prof is a must-do! Look up their websites and see if their research interests you, this should be done as early as possible so you can work for who you want to work with. Check if they offer summer or fall research.

Decide on the model that you are most comfortable using or would like to learn about. If you plan on working with people eventually, choose a prof who is doing clinical work etc.

You can also get an idea of how it is like to work with the prof by talking to students that were in the professor's lab before to see what their experience was like. Meet with the potential lab-mates as well. A good lab dynamic can truly make the experience more worthwhile. Ask them about the involvement of the prof (hands on vs. independent).

### **Research Comments Summer v. Fall:**

Summer research allows more involvement and time to focus on the research course alone. Some students feel that they are able to be more focused, with a consistent schedule, and with pros such as: results likely, more experience, learning more

techniques, able to come in off hours as summer is more flexible, quicker (4 mo vs. 8 mo.), presentation and thesis are cleaner as your work is fresher in your mind. Some students feel that more commitments in other courses and activities during the Fall-Winter session and less time for lab work and writing the final thesis may be difficult.

However, other students prefer to try and do paid research for the summer and that profs may go on a long vacation. Some also feel that the research project could also interfere with getting a summer job or part time job. Some students also feel that they can develop a longer relationship in the Fall-Winter with the members of the lab, but others found that it was easier to build relationships in the summer.

Students with projects that requires a lot of waiting or depend on long-term results may find it easier to do the project over Fall-Winter as they have more time to collect results.

## PCL473

### **Course evaluation comments:**

Students found the atmosphere of the course lectures to be a good learning atmosphere and conducive for asking questions.

Some students found the level of depth to be too superficial for many of the topics covered in class. However, many also enjoyed having to learn various different aspects of toxicology.

Some students found the rubric used to mark midterms to be too unyielding and harsh. They believe that the expectations for each short answer question were not clear from the given questions. The questions were found to be very brief leaving students limited information regarding how to approach the question. Many also found the structure of the tests to be geared towards testing your ability to simply memorize facts instead of truly understanding and applying the lessons learned.

Some students found that the course topics overlapped greatly with many other 400-level Toxicology courses.

As well, students found expectations for the written assignments to be too vague.

### **Quotes and Tips from upper years:**

Take good notes and perhaps record the lectures. Put time into memorization. Take your time writing the reviews - choose a chemical you like and can write a lot about. The forensic toxicology section will require background research on your part outside of everything that was in lecture. A final exam strategy is to go over all the material, then write detailed answers to past exam questions with your notes as an aid.

## PCL475

### **Course evaluation comments:**

Students found the class enjoyable despite the heavy workload. They appreciated the opportunity to discuss several aspects of the topics at such an in depth level. They appreciated how mentally stimulating and challenging the course was.

Some students found that the use of word documents instead of power point slides as the provided notes to be rather disorienting. As well, for students who print out notes, it becomes time consuming having to fix each document.

### **Quotes and Tips from upper years:**

Be familiar with the lecture material and the readings particularly the terms given and the drug list. Give yourself ample time to study because there is a lot of material to cover.

Even if you are not interested in neuroscience, you may still want to give this course a chance. Dr. Burnham may change your mind!

# PCL477

## **Course evaluation comments:**

Some students found the pacing of the lectures to be a little slow.

Many students found the material to be explained in a very clear and understandable manner. They appreciated the focus on specific experiments in the field.

Students appreciated being told what to specifically focus on for the exam/midterm. They also found the level of difficulty of the course and its tests to be very fair.

## **Quotes and Tips from upper years:**

Start early on the written assignment. Make sure to give yourself time to edit. It's a decent amount of background reading depending on the topic you choose.

Know the lecture material, this course is pretty straight forward but every slide is fair game for the test. Be prepared to APPLY the material in the tests and not just regurgitate it

Know the enzymes and pay attention to the topics that the professor says will be on the tests, when doing the tests, pay attention to small details and spelling!

Attend class! Some concepts are explained with graphs and figures so listening to recordings might not be sufficient.

# PCL481

## **Course evaluation comments:**

Many students felt the lecture subjects were too different for each section and that better organization would have improved the flow of the course.

Some students found certain sections to be too fast paced and would have preferred a 3 hour lecture rather than a shorter 2 hour lecture.

## **Quotes and Tips from upper years:**

Know the concepts in the first four lectures very well. Know all the details of the receptor mechanism diagrams unless told otherwise and ensure that you have a strongly supported mechanism before you select your topic for the review.

Understand the big concepts and learn to draw the modular domains and pathways of the nuclear receptors

Attend class! Recordings will not be sufficient. Review lectures before class, listen attentively and ask questions.

Give yourself ample time to study for the tests.

Start working on the review paper and presentation far ahead of time since they take a long time.