UNIVERSITY OF TORONTO
PHARMACOLOGY & TOXICOLOGY
STUDENT ASSOCIATION

Course Commentary 2015-2016

A guide to surviving pharmacology & toxicology!

Courses Included

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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.

Course Commentary
2015-2016

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PCL102

Course evaluation comments:

This course requires your attention. Not only is the lecture material important, but the additional required readings are testable. The challenging aspect of this course is that almost every lecture would build on another, therefore try to stay on top of things.

Quotes and Tips from upper years:

Go to class. Pay attention to demonstrations

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PCL201

Course evaluation comments:

This course entails many different concepts such as basic pharmacology definitions, intro to pharmacodynamics, pharmacokinetics, drug and substance abuse, an introduction to toxicology and more. Aside from understanding concepts, definitions, graphs and diagrams, this course also requires understanding and memorization of some basic math calculations relating to pharmacokinetics. The content and workload of this course builds up as the course progresses and is best to start studying early. Attention to detail (especially for graphs and diagrams) is imperative to do well in examinations. It is important to attend lectures and to review lecture content frequently. Overall many students found this course very interesting but required time and effort to do well.

Quotes and Tips from upper years:

It is recommended by previous students to attend tutorials and buy test packages to practice and understand concepts further. It is also recommended to ask professors and TA's during office hours to ask any questions when needed. Many students also found making tables for remembering several drugs, receptors and several other concepts.

Course Commentary
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PCL297

Course evaluation comments:

What you need to do for this course is to find a research supervisor who is interested in supervising you. This can be a faculty member inside or outside of the department. Previous students have suggested you review faculty and research and contact those you have an interest in- making note that the supervision is for PCL297H- which is a Pass/Fail course. After you have found a supervisor you can go to the main office- MS4207- and get a form from the undergraduate assistant. This form needs to be completed by both the student and the supervisor, returned to the undergraduate assistant at which point it will be reviewed by the course coordinator and you will be enrolled in the course.

Quotes and Tips from upper years:

- Do your own research about a potential lab to work in… – Who is doing what? And does this sound interesting?
- Approach faculty (instructors, coordinators), researchers, graduate students…
    - Email or in-person
    - Make it personal. This has been stressed tremendously by students, as a personal letter to a supervisor tends to have the highest chance for a reply
- Offer to initially volunteer in desired lab if no position is yet available
- Tends to be time consuming as you have to spend time in a lab (about 5-10 hours a week), hand in a midterm report, annotated bibliography, and a final report
- No grade appears, but rather a Pass/Fail

Course Commentary
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PCL302

Course evaluation comments:

As it is true for other courses, attending the lectures is a MUST. Textbook helps you in understanding better, if not ask an upper year who took the course to help you in grasping on concepts. This course covers a lot of information, making sure you are taking good notes and organizing them helps you in studying for your midterms and exam. Try to learn why each topic is being discussed, it will make recalling them so much easier as you move forward in the course. Cell biology knowledge from BIO230 is necessary to understand concepts in PCL302. You will need to draw connection between lectures by comparing and contrasting receptors and drug mechanisms. Start studying early for your final exam since it is cumulative.

Quotes and Tips from upper years:

- Listen to recordings for sure!
- Be smart! Professors emphasize on the important slides, take note of them.
- Make flowcharts and table while you make connection between concepts, it should make studying easier. Making sure you know the slides means you can do well on the exam.
- Short Answer Questions are very specific when it comes to the answer they are looking for, practice past test to get those right.
- TA and professors are great for clarifying concepts and questions you might have from lectures and past midterms.
- On the final written assignment follow the instructions and answer thoroughly.
- When doing the past tests, time yourself as a practice for the actual midterm and exam where timing can be a little rough

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PCL345

Course evaluation comments:

The course is organized around guest lectures, so make sure to come to class. Try to take notes on what each lecturer emphasizes, but there's no need to take notes on the question period which follows each lecture. Organize the lectures thematically, taking notes on the primary themes and questions. This will help you connect different lectures to one another, a skill which may come in handy when writing for the class. This class has a heavy focus on asking insightful questions, so practice coming up with interesting ones for each lecture!

Course Commentary
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PCL362

Course evaluation comments:

This course explores pathways and mechanisms of toxic reagents in the body and disease states. The evaluation consists of 2 term tests and 1 final exam, all in short-answer/essay format. This course is taken with 3rd year Pharmacy students, however the evaluation is separate. The tests demand that the student be able to graphically reproduce and explain pathways in detail, and connect with example studies. Students emphasized the importance of detailed memorization and thorough reviewing. It is recommended to include as much detail as possible when answering test questions.

Quotes and Tips from upper years:

- Memorize the diagrams and details/experiments relevant to the diagrams. Be able to reproduce diagrams/reaction pathways and explain them on the test

- Pay very close attention to mechanisms. Write your heart out on exams.

- Memorization is the name of the game.

- Don't be afraid to be redundant - seriously. For the midterm and exam, draw out the entire pathway (enzymes, transition molecules etc.) and then explain it STEP-BY-STEP through a short essay. Be very detailed.

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PCL366

Course evaluation comments:

This course is difficult lab course and requires a lot of time. Prepare for the lab thoroughly and give yourself ample time to understand the procedures. This will guarantee success, since the pre-lab marks are worth it and it will prepare you for the pre-lab quiz and the lab – three birds with one stone. Always be ready to ask for clarification from your TAs and lab coordinators. The exam is known to be long so review daily.

Quotes and Tips from upper years:

Prepare your pre-lab thoroughly, make a good flowchart, and know the procedure well - this will help you ace the pre-lab quizzes and finish on time because you don't have to keep looking back at the lab manual. Even if you plan on writing your lab reports on the last day, get everything else prepared earlier so you can do the writing smoothly... have all your references and papers collected, and your data tables and figures prepared so you can get writing. Don't forget to include sources of error in your discussion. If you don't do your writing last minute, you can contact the TAs/lab coordinator with questions about what specific things they are looking for in the introduction, conclusion, etc.

Course Commentary
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PCL376

Course evaluation comments:

Do not be deceived by the misleadingly easy beginning to this course, begin studying early and prepare extensively for examinations. It may help to find supplementary reading on statistical concepts: this class has a heavy emphasis on theory rather than calculation. If you cannot describe abstract concepts concisely and accurately you will have difficulty in this course. Many students have found success in attending office hours for this class. Prior knowledge from STA220 can be helpful to students taking this course, but beware! Many students that were successful in STA220 had difficulties with this course, so do not rest on your laurels.

Course Commentary
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PCL389

Course evaluation comments:

Students enjoyed the opportunity for self-reflection and class interaction, which is rare in most PCL courses. They also found the small class size to be conducive for learning and well-structured for class debates and discussions, which were fun and educational. Students also appreciated the ability to practice their presentation skills.

In addition, students found that the community service component of the course may be time-consuming. However, if time is well-planned, the experience is very rewarding. Another challenging aspect is the reflection papers. Students say the assignments demand deeper insight and perception.

Quotes and Tips from upper years:

Class participation is important. Marked on ability to write philosophically (or show deep understanding and insight).

With a focus on experiential learning, this course strives to develop self-awareness as well as your ability to articulate those self-realizations. For the reflections, follow the criteria prompts and you should do reasonably well.

Depending on whether time is a scarce commodity for you, it may be worthwhile to choose a community partner that does not require a time-extensive commitment (i.e. CHRN). However, the ones that do require a bit more time (i.e. commuting to meet in person, interaction with people of interest) can be highly rewarding.

The volunteer placement is a commitment that you have to make time for. If you already have a lot of other extracurricular, research, etc., just be prepared -- a lot of placements are a distance away from campus as well. Making notes during your volunteer time at your placement about your thoughts will help you write your reflections.

Course Commentary
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PCL402

Course evaluation comments:

This is a great course for those of you who want to do clinical research or get involved with the private industry (e.g. pharma, CROs). It is important to prepare extensively for this course by reading assigned readings before class and participating in class discussions. Avoid procrastinating on assignments. Also, whenever possible, ask for feedback on your drafts.

Quotes and Tips from upper years:

Make sure to go to tutorials to get important tips for assignments. Include all relevant information in each particular subsection in written assignments and keep your works clean and professional.

Course Commentary
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PCL461/465

Course evaluation comments:

These two courses focus on writing lab reports. However, some students felt that there were unclear expectations/criteria for lab reports. Both courses provide lab experience and practice with group work. It is advised to work efficiently as exams are fair but time-consuming. Be sure to know concepts well.

Quotes and Tips from upper years:

It is important to prepare well prior to labs and to write reports early in order to stay on top of everything. This also helps to do well on pre-lab quizzes, which eventually add up. Do not violate any expectations (e.g. page limit, font size, etc.) and be concise. If you do poorly on the first lab report, do not worry; learn from your mistakes to improve on the next one. Make sure to ask TAs for help if you ever need it. Also, remember to set deadlines ahead of the actual due date to coordinate with group members. Especially for the surgery experiment, you should divide the work among your team ahead of time. Read other papers to help you write thoughtful discussions. During your presentation, try to speak confidently and engage the audience.

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PCL469

Course evaluation comments:

It is imperative that you attend every lecture and take detailed notes, as the lecture slides do not cover all the material which is assessed on tests and exams. This class will throw an overwhelming amount of information at you, perhaps more than any class you've taken to date. To alleviate some of this burden, organize your notes well from the start. It helps to condense your notes prior to exams: identify prototypical examples of drugs and main themes of lectures and make sure you know these well. It's very easy to get bogged down in the details in this class and lose track of the bigger picture. That being said, there is still a big emphasis on memorization of drug names and actions in this class – making flash cards before you need them is a good idea. While studying, past tests can really help in understanding the style of questions asked.

Make sure to take notes during SGS sessions, as these may feature heavily on the exam. Don't be shy during SGS either – active participation is a large part of your mark and is easy to accomplish if you just speak up!

Course Commentary
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PCL470

Course evaluation comments:

This course presents plenty of information within each lecture. The amount of information is overwhelming and can be burdensome if daily revision is not practiced. This course focuses on knowledge of pathways, receptors, neurotransmitters, brain structures, drug names and antimicrobials. It is important that enough time is reserved to commit such topics to memory before the midterms and exam. Use of flashcards and tables were noted to be extremely helpful in studying for this course.

Quotes and Tips from upper years:

- Organize your notes well. The amount of information may be overwhelming, but awareness of why this topic is being discussed will make it easier to remember and retrieve the information as needed. Since there is extraneous information, study smart. For example if short answer questions will be on the test, you can bet that concepts/processes/lists that you will be tested on. Cover your bases. Also don't try to memorize every drug mentioned. Choose the prototypical ones of each class as well as ones that have notable characteristics to them.

- There's a lot of CNS topics covered here, don't mix up your neurotransmitters and brain structures! Know your drugs and the receptors they work at -- this will make it easy to answer questions about side effects at a certain system. Make a table to keep track of drugs in each unit. Know your antimicrobials well. You have to know the names of the drugs, so start making your preferred method of revision early -- flashcards, tables, handwritten lists.

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PCL472/474

How to choose a prof:

There are two ways to approach this. The first is to pick an area of interest and see which profs have current projects related to your topic of interest. The second is to get recommendations from previous students who have worked with the PI and make your decision based on the lab/work environment. Either way, it is a good idea to read about their research as well as their current publications before setting up a meeting. During the meeting, be sure to discuss expectations and ensure you can meet the time and work commitments. Lastly, it is wise to start looking and contacting profs early!

Summer vs. year-long research:

Summer is a 9-to-5 daily investment if you want to get really involved in your project. Doing it during the year may make you feel less immersed in your research. It's much simpler to coordinate and design your own schedule on daily experiments because you don't have to work around your course schedules and assignment deadlines. This choice depends on what type of project you want to do and what results you want to get. Cell work would be a good match for summer projects, while animal work might be better in the fall, just due to how long it takes animals to grow so you can get your results.

The downside to a summer project is that it will be difficult to balance a part-time job and you won't be eligible for summer research awards. As well, if your project requires you to collect data over time then a summer project may be difficult, as you would have to condense your experiment.

Quotes and Tips from upper years:

Communicate often with your supervisor.

Think early on about what kind of research you want to take on (e.g. wet lab, clinical, field of study...) If you're in an earlier year, remember to rack up more research experience, so that when you're contacting a professor for your final thesis project, you'll get your top choice because you've got experience. Don't be afraid to ask for help from the members in your lab, if you're confused about an experiment -- it's better to make sure you know everything for certain, or you'll waste resources if you make a mistake or assumption.

Maintain communication with PI. Don't be afraid to report any mistakes you made - remember, it's a learning experience. Keep organized notes so you can refer back to them. I also found that writing weekly summaries was very helpful when writing the interim and final reports.

From the list of professors in the departmental package, narrow it down to ones that are in fields you are interested in. Go in and chat with some of them and ask what projects they can offer you. Also, don't be afraid to suggest a project/idea that you may be interested in! Professors (usually) love this, and will appreciate this innovative mentality. Especially if you want to do graduate school.

Go on their websites and read about their research, and if you're interested in their field or the techniques they use in their lab. Find some other students who have worked with the professor in the past and get some other opinions. Look up a few professors ahead of time and see if you can meet them earlier -- such as at the PTSA Prof Student Luncheon.

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PCL473

Course evaluation comments:

Students found the structure of the course to be a good learning environment and conducive to asking questions.

Some students found the depth of material too superficial since a broad range of topics are covered. However, many also enjoyed learning a variety of toxicological aspects. The topics greatly overlapped with many other 400-level Toxicology courses.

Some students found the rubric for marking midterms too unyielding and harsh. They believed that the expectations for short answers were not clear and the questions were too vague. The questions implicitly asked for more critical thinking beyond basic memorization.

Quotes and Tips from upper years:

Take good notes and record the lectures. Spend time memorizing the material. Take your time writing the reviews – choose a chemical you like and can write a lot about.

The forensic toxicology section will require extra background research outside of what was learned in class.

The final exam strategy is to go over all the material, then write detailed answers to past exam questions with your notes as an aid.

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PCL475

Course evaluation comments:

This course focuses on the pathology and the mechanism of action of drugs in the CNS. The instructor is usually quite clear about which material will be evaluated. However, it is vital to regularly review in order to keep up with the heavy course load. Students found that the course was not worthwhile due to the fact that it was a yearlong course but was only worth half a credit. They also found the workload to be too demanding, considering the many supplementary readings and drugs that had to be memorized.

Quotes and Tips from upper years:

Regular review is integral; it is easy to fall behind if you do not review since there are 3 hours of weekly lecture and a 1-hour tutorial. Students found the course to be quite straightforward as Dr. Burnham is an organized lecturer who makes clear which material is being evaluated.

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PCL477

Course evaluation comments:

This course is a fairly new course to the department of pharmacology and toxicology and explores different types of agents that can damage DNA and examine how cells respond to such damage. By examining such effects, mechanisms of several anticancer drugs can be understood. Cell DNA damage response to specific pharmacological and toxicological agents covers a large area of research and as such many previous students have found this course to be very interesting.

Quotes and Tips from upper years:

Previous students have found this course to be quite straightforward. There are no trick questions, however this course requires attention to detail and is recommended to study the content extensively and early to do well on exams. It is also important to go to class and understand the concepts.

Course Commentary
2015-2016

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PCL481

Course evaluation comments:

This course is straight forward. The focus of the course is on experimental techniques, mechanisms of toxicology, and applications rather than the information presented on slides in class. This is a thinking course rather than a memorization course.

Quotes and Tips from upper years:

- It's a very small class, so get to know the professor. He genuinely enjoys questions, both during
and after class.
- For every slide ask yourself "why is this true?", rather than memorizing the contents.
- Know the big concepts in the first four lectures very well, make sure you have a strongly
supported mechanism before choosing your topic of review
- Attend the classes, the recordings will not be sufficient!
- Start doing past midterms early since they can be time consuming

Course Commentary
2015-2016

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PCL486

Course evaluation comments:

This class is very dense in material and can overwhelm students because of the volume of information presented. To combat this, make sure to organize your notes well, and make sure you understand why each topic is being discussed. This will help you establish continuity between lectures and topics: a skill which will be helpful for evaluations. There is a good deal of extraneous information in this course, so make sure to focus on core concepts rather than small details and nomenclature. Receptor biology and interaction between signaling pathways feature heavily in this course.