

HOW TO GET INTO PHARMACY SCHOOL

SLIDES WILL BE POSTED ON [BETHUNE.YORKU.CA/EVENTS](https://bethune.yorku.ca/events)



WHO ARE WE?

■ Samantha Dungca

- 2nd year Chemistry Major, currently enrolled in ConEd
- SOS Peer Mentor
- SOS Senior Student Ambassador

■ Anuja Dua

- 2nd year Biomedical Science Major
- SOS Peer Mentor
- SOS Student Ambassador



AGENDA

- Canadian Pharmacy Schools
- Focus on requirements for Ontario schools:
 - University of Toronto
 - University of Waterloo
- PCAT

CANADIAN PHARMACY SCHOOLS

- Newfoundland
 - Memorial University of Newfoundland
- Nova Scotia
 - Dalhousie University
- Quebec
 - Université de Montréal
 - Université Laval
 - NOTE: French proficiency test is required



CANADIAN PHARMACY SCHOOLS

- Ontario
 - University of Toronto (PCAT)
 - University of Waterloo
- Manitoba
 - University of Manitoba
- Saskatchewan
 - University of Saskatchewan



CANADIAN PHARMACY SCHOOLS

- Alberta
 - University of Alberta
- British Columbia
 - University of British Columbia

NOTE: All universities, except for U of T and U of Waterloo, give preference to provincial residents OR require higher GPAs for out-of-province applicants



UNIVERSITY OF WATERLOO



UNIVERSITY OF WATERLOO

- Doctorate of Pharmacy (PharmD)
- Admits 120 students each year
 - 600 applicants
- Four year (44 month) entry-to-practice program:
 - 8 academic terms
 - 3 co-op work terms
- Deadline to apply: January 2nd, 2019

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Curriculum:

<i>Year</i>	<i>Term</i>		<i>Date</i>
Year 1	Winter	Academic (1A)	January–April
	Spring	Academic (1B)	May–August
	Fall	Academic (2A)	September–December
Year 2	Winter	Work Term 1	January–April
	Spring	Academic (2B)	May–August
	Fall	Work Term 2	September–December
Year 3	Winter	Academic (3A)	January–April
	Spring	Work Term 3	May–August
	Fall	Academic (3B)	September–December
Year 4	Winter	Academic (4A)	January–April
	Spring	Academic (4B)	May–August

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Rx2021 (2A) Fall 2018 Schedule (published June 19) September 6 - December 3

Sample timetable:

Time	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
8:30			PHARM 228 LAB 101 8:30-10:20		
9:00	PHARM 220/221 (IPFC 1/2) LEC 9:00-11:50 PHR 1004 Jeff Wong / Brett Barrett	MEETINGS	PHR 2009/2022/2024/3026 Professional Practice 3 Allison Tario		PHARM 220/221 (IPFC 1/2) TUT 8:30-12:20 PHR 1004 Jeff Wong / Brett Barrett
9:30					
10:00					
10:30					
11:00		PHARM 220/221 (IPFC 1/2) LEC 11:00-1:50 PHR 1004 Jeff Wong / Brett Barrett	PHARM 228 LAB 102 11:00-12:50	PHARM 220/221 (IPFC 1/2) LEC 10:30-12:20 PHR 1004 Jeff Wong / Brett Barrett	
11:30			PHR 2009/2022/2024/3026 Professional Practice 3 Allison Tario		
12:00	PHARM 224 TUT 12:00-1:20 PHR 1004 Pharmacokinetic Fundamentals Andrea Edginton				
12:30					
1:00					
1:30			PHARM 228 LAB 103 1:30-3:20		
2:00	PHARM 232 LEC 2:00-4:20 IHB 2018 Medical Microbiology Emmanuel Ho		PHR 2009/2022/2024/3026 Professional Practice 3 Allison Tario		
2:30		PHARM 227 LEC 2:30-4:20 PHR 1004 Health Systems in Society Lucy Feng			
3:00					
3:30				PHARM 224 LEC 3:30-5:50 PHR 1004 Pharmacokinetic Fundamentals Andrea Edginton	
4:00					
4:30					
5:00					
5:30					
6:00					
6:30					
7:00					
7:30					

UNIVERSITY OF WATERLOO

■ Academic Requirements

- Minimum overall post-secondary average of 75% (3.3/4.0 or 7.0/9.0)
- Full course load is preferred (30 credits per year)
- PCAT not required

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UNIVERSITY OF WATERLOO: PREREQUISITE COURSES

■ Biology

- Introductory biology (6 credits):
 - SC/BIOL 1000 and SC/BIOL 1001
- Genetics (3 credits):
 - SC/BIOL 2040
- Microbiology (3 credits):
 - SC/BIOL 2905 or SC/BIOL 3150

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UNIVERSITY OF WATERLOO: PREREQUISITE COURSES

■ Chemistry

- General Chemistry with lab (6 credits):
 - SC/CHEM 1000 and SC/CHEM 1001
- Biochemistry:
 - SC/BIOL/BCHM 2020 (3.0) or SC/CHEM 2050 (4.0 – lab component included)
- Organic Chemistry with lab (6 credits):
 - SC/CHEM 2020 (3.0) and
SC/CHEM 2021 (3.0)

UNIVERSITY OF
WATERLOO



UNIVERSITY OF WATERLOO: PREREQUISITE COURSES

■ English (3 credits)

- Examples: EN 1001, 1002, 1006, 1201, 2011, 2012, 3172
- To confirm course equivalency, email: pharmacy@uwaterloo.ca

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UNIVERSITY OF WATERLOO: PREREQUISITE COURSES

- Calculus (6 credits):
 - SC/MATH 1505 (6.0)
 - SC/MATH 1013 (3.0) and SC/MATH 1014 (3.0)
 - SC/MATH 1300 (3.0) and SC/MATH 1310 (3.0)
- Statistics (3 credits):
 - SC/MATH 1131 or SC/MATH 2560 (3.0)
 - SC/BIOL 2060 (3.0), HH/PSYC 2020 (6.0),
HH/PSYC 2021 (3.0), or HH/KINE 2030 (3.0)

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UNIVERSITY OF WATERLOO: PREREQUISITE COURSES

■ Humanities or Social Sciences

- 12 credits in any of the following (maximum 6 credits per subject area):
 - Anthropology
 - Psychology
 - Philosophy
 - History
 - Languages
 - Economics
 - Geography
 - Etc...
- Email the course syllabus to pharmacy@uwaterloo.ca if unsure

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Important Dates:

<i>Date</i>	<i>Event</i>
Aug 13, 2018	<p>Applications open.</p> <p>Click here to access the online application.</p> <p>For instructions on navigating the online application, please reference the Online Application Instructions document (PDF).</p> <p>Applications will be acknowledged by email and further information will be provided.</p>
Aug 14, 2018	<p>First Canadian Professional Health Sciences CASPer (Computer Based Assessment for Sampling Personal Characteristics) test date offering. Specific details are posted on the CASPer website.</p>
Sep 6-19, 2018	<p>OUAC shutdown</p> <p>Applications are unavailable during this time. All applications that have been started but not submitted prior to September 6, will be deleted. The application system will be available once again on September 20.</p>

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Dec 24, 2018 - Jan 1, 2019	<p>Holiday break</p> <p>Acknowledgement emails will resume the first week of January 2019.</p>
Jan 2, 2019	<p>Deadline to submit the January 2020 application and pay the application fee (midnight EST).</p>
Jan 20, 2019	<p>Final Canadian Professional Health Sciences CASPer test date. Specific details are posted on the CASPer website.</p>
Jan 21, 2019	<p>Deadline to submit Admission Information Form (AIF).</p>
Feb 7, 2019	<p>Deadline to submit the following items (details will be provided in the acknowledgement email you will receive after you apply to the program):</p> <ol style="list-style-type: none">1. Interim post-secondary transcript(s) showing final grades up to the end of the fall 2018 term as well as any course enrolment for the winter 2019 term2. Reference Letter Form3. Confirmation of English Language Requirements (if applicable)

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Apr 11, 2019	Invitations for Pharmacy Admission Interviews and Fundamental Skills Assessment (FSA) sent by email. Those not invited will be notified by email.
Apr 18, 2019	Deadline to confirm attendance for your interview and FSA. If you fail to respond by this date, your interview time may be assigned to another applicant.
May 3 – 5, 2019	Pharmacy Admission Interviews and FSA for selected candidates.
May 31, 2019	Deadline to submit post-secondary transcripts with final winter 2019 grades.
Jun 13, 2019	Admission decisions communicated to all interviewed applicants.
Jun 20, 2019	Deadline to accept Offer of Admission to Pharmacy.
Jan 2020	Lectures begin

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■ Non-Academic Requirements

- **Pharmacy Admission Information Form (AIF)**
 - Information about yourself and your involvement in extracurricular activities
- **References**
 - Preferably from a pharmacist, or a physician or nurse (no relatives)
- **CASPer Test**
 - Limited number of test dates
 - Remaining dates are Dec 4, 2018, Jan 10, Jan 20, 2019

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■ Non-Academic Requirements

- **Interview**
 - Conducted by faculty members and pharmacists
- **Fundamental Skills Assessment**
 - Includes a Reading Comprehension, Writing, and Basic Mathematical Skills Test (under a time limit)
 - Conducted on the same day as your interview
- **Experience**
 - Work or volunteer experience in pharmacy setting
 - Community involvement
 - Full time work experience is ideal

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CASPer (Computer Based Assessment for Sampling Personal Characteristics) Test

- Assesses for non-cognitive skills and interpersonal characteristics
- 12 sections of video and written scenarios
- No studying is required for CASPer, but you should familiarize yourself with the test structure
- Limited number of testing dates and times
- Remaining dates are Dec 4 2018, Jan 10 and Jan 20, 2019
- Check out: www.takeCASPer.com

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■ Co-op Program

- Community: retail pharmacy or family health clinic
- Institutional: hospitals, specialty facilities, or long term care institutions
- Government health agencies
(Ex. Health policies)
- Pharmacy organizations
- International initiatives



UNIVERSITY OF WATERLOO

■ Application Checklist:

- ✓ Online application (OUAC) & pay fee
- ✓ Complete all prerequisites
- ✓ Submit AIF
- ✓ Completed CASPer
- ✓ Submit reference letter and transcript
- ✓ Attend interview (if invited)

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■ Contact Information

- Telephone: (519) 888-4499
- Email: pharmacy@uwaterloo.ca
- Website: <https://uwaterloo.ca/pharmacy/future-students>



UNIVERSITY OF TORONTO: LESLIE DAN FACULTY OF PHARMACY



UNIVERSITY OF TORONTO

- Doctorate of Pharmacy (Pharm D)
- Admits 240 students each September
 - 569 – 730 applicants per year
- Four year professional entry-to-practice program



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UNIVERSITY OF TORONTO

Sample Timetable:

FALL TERM: YEAR 1, 2016 - 2017

	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
9:00-10:00		PHM130H1 Lecture PB B150	PHM110H1 Lecture PB B150	PHM145H1 Lecture PB B150	
10:00-11:00				PHM142H1 Lecture PB B150	
11:00-12:00		PHM142H1 Tutorial PB B150	PHM145H1 Lecture PB B150		
12:00-1:00	PHM145H1 Lecture PB B150	PHM144H1 Lecture PB B150	Other Mandatory Course/Program Requirements PB B150	Co-curricular/ Extra-curricular Activities	
1:00-2:00	PHM144H1 Lecture PB B150				
2:00-3:00	PHM146H1 Lecture PB B150				PHM144H1 Lecture PB B150
3:00-4:00					PHM144H1 Optional Tutorial PB B150
4:00-5:00					PHM113H1 Lecture PB B150
5:00-6:00					

UNIVERSITY OF TORONTO

■ Academic requirements

- Minimum university average of 70% (B or 6.0/9.0 or 3.0/4.0)
- Full course load is preferred (30 credits per year)
- Prerequisite courses
 - <http://www.pharmacy.utoronto.ca/pharmd/admissions/academic-requirements/subjects>
 - http://www.pharmacy.utoronto.ca/sites/default/files/upload//pharmd/PharmD%20Admissions%202018/2B_1_Link%20from%20%202B_Course%20Codes_Ont%20plus%20select%20non%20Ont%20institutions_July%202017.pdf



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UNIVERSITY OF TORONTO: PREREQUISITE COURSES

■ Biology (6 credits)

- Introductory biology: SC/BIOL 1000 (3.0) and SC/BIOL 1001 (3.0)

■ Biochemistry (3 credits)

- SC/BIOL/BCHM 2020 (3.0) or SC/CHEM 2050 (4.0)



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UNIVERSITY OF TORONTO: PREREQUISITE COURSES

■ Chemistry

- General Chemistry with lab (6 credits):
 - SC/CHEM 1000 and SC/CHEM 1001
- Organic Chemistry with lab (6 credits):
 - SC/CHEM 2020 (3.0) and SC/CHEM 2021 (3.0)
- Physical Chemistry (3 credits): SC/CHEM 2011 (3.0)



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UNIVERSITY OF TORONTO: PREREQUISITE COURSES

■ Physiology (6 credits)

- HH/KINE 2011 (3.0) and HH/KINE 3012 (3.0)
- NOTE: requirement was added in the 2017 admission cycle

■ Physics

- Grade 12 physics (SPH4U or equivalent) OR 6 credits of university physics
University Physics: SC/PHYS 1010, SC/PHYS 1420,
*SC/PHYS 1510. (4.0)



UNIVERSITY OF TORONTO: COURSE PREREQUISITES

■ Math

- Calculus (6 credits):
 - SC/MATH 1013 (3.0) and SC/MATH 1014 (3.0)
 - SC/MATH 1300 (3.0) and SC/MATH 1310 (3.0)
 - GL/MATH 1930 (3.0) and GL/MATH 1940 (3.0)
 - NOTE: courses must be prerequisites for upper/advanced level calculus courses
- Statistics (3 credits):
 - SC/MATH 1131 (3.0) or SC/MATH 1532 (3.0)
 - SC/BIOL 2060 (3.0), HH/PSYCH 2020 (6.0), HH/PSYCH 2021 (3.0), HH/PSYCH 2022 (3.0), or HH/KINE 2030 (3.0)



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UNIVERSITY OF TORONTO: PREREQUISITE COURSES

■ English (3 credits)

- Examples: EN 1001, 1006, 1101, 1102, 1103, 1201, 1602, 1953
- NOTE: requirement was changed from high school English to university English in the 2017 admission cycle



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UNIVERSITY OF TORONTO: COURSE PREREQUISITES

■ Humanities or Social Sciences (6 credits)

- Examples: anthropology, psychology (introductory only), philosophy, history, economics, human geography, classics, literature, religion, political science, sociology
- NOTE: as of the 2017 admissions cycle, languages no longer fulfill this requirement



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■ Non-Academic requirements

- PCAT
- Interview
- Reference letters and personal profiles are NOT required



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■ Interview

- Multiple-Mini Interview (MMI) format
- 8 – 10 interviews, 6 – 7 minutes long each
- Interviewees are given a question/scenario and are required to discuss or enact their response
- Questions/scenarios assess non-academic attributes
 - Examples: conscientiousness, accountability, problem solving, emotional intelligence, ethical reasoning, communication skills, leadership, resilience

<http://www.pharmacy.utoronto.ca/pharmd/admissions/interviews>



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- Sample interview question:

Dr. Jackson frequently recommends homeopathic medicines to her patients. There is no widely accepted theory to suggest how homeopathic medicines work; indeed Dr. Jackson does not believe these medicines do work. She recommends homeopathic medicine to people with mild and nonspecific symptoms such as fatigue, headaches and muscle aches, because she believes that it will do no harm but will give them reassurance. Consider the ethical problems that Dr. Jackson's behaviour might pose. Discuss these issues with the interviewer.

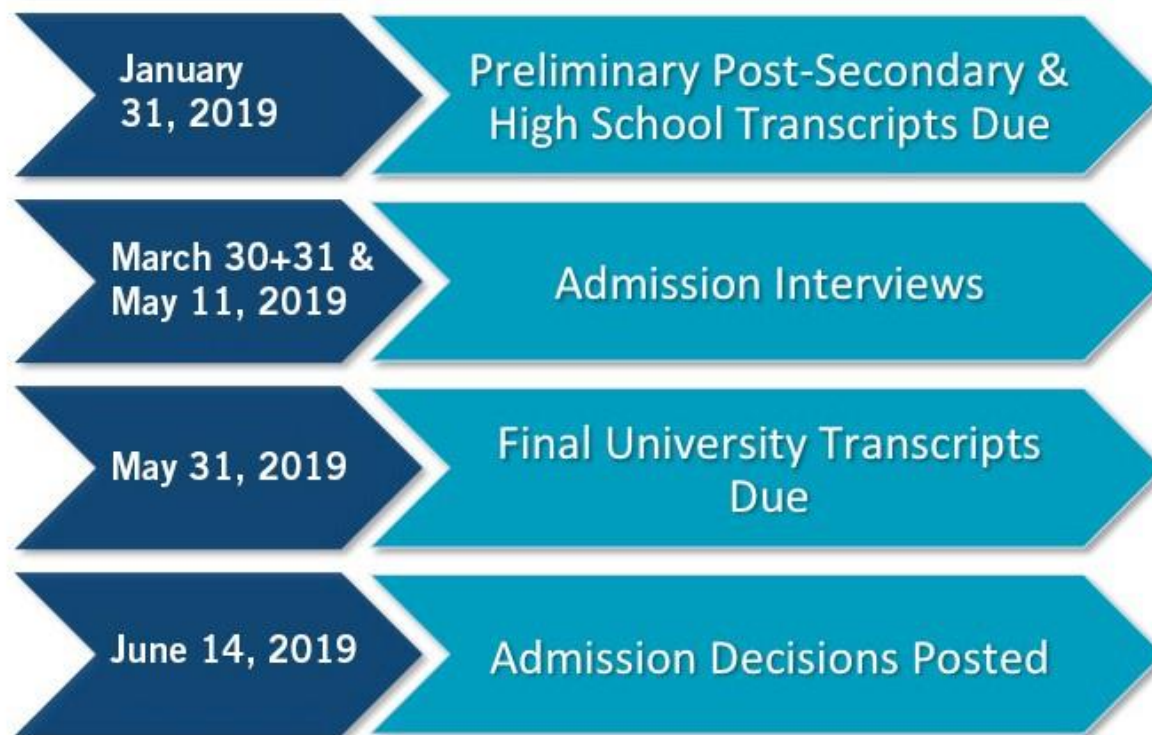
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IMPORTANT DATES!



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MORE IMPORTANT DATES



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■ Application Checklist:

- ✓ Complete prerequisite courses
- ✓ PCAT
- ✓ Online application
- ✓ University and high school transcripts
- ✓ Interview



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UNIVERSITY OF TORONTO: LESLIE DAN FACULTY OF PHARMACY

■ Contact Information (Admissions Office)

- **Telephone:** (416) 978-3967
- **Email:** adm.phm@utoronto.ca
- **Website:** <http://www.pharmacy.utoronto.ca/pharmd/admissions>

PHARMACY COLLEGE ADMISSION TEST (PCAT)

- U of T application requirement
- Length: 3 hours 25 minutes + 15 minute break
- Questions: 192 multiple choice items and 1 writing prompt
- Register online at www.pearsonvue.com/pcat/
- Registration Fee: \$210
- May write test up to 5 times
- Practice tests may be purchased on the website

PCAT

- 4 testing windows: July, September, October/November, January
 - January 3-4 2019
 - Registration deadline: November 2nd
 - Late registration deadline: December 12th
 - February 1-14 2019
 - Registration opens December 20 2018
 - Registration deadline: January 16 2019
 - Late registration deadline: January 23 2019

First come, first serve basis

<https://www.pcatweb.info/downloads/About/ImportantPCATDates.pdf>

PCAT: FORMAT

- 5 sections
 1. Writing
 2. Biological Processes
 3. Chemical Processes
 4. Critical Reading
 5. Quantitative Reasoning
- Must achieve a minimum standard in each section

<https://www.pcatweb.info/downloads/about/TestDevelopmentStructure.pdf>

PCAT: FORMAT

- New PCAT format effective 2016
- No verbal ability section
- 40% of the biological and chemical processes sections require that you use knowledge and analytical skills to answer passage based questions on research studies and experiments
- 40% of the critical reading section is composed of humanities and social science passages
- The quantitative reasoning section contains a greater proportion of basic math and algebra, and fewer calculus and pre-calculus questions

<https://www.pcatweb.info/PCAT-Updates.php>

PCAT: WRITING

■ Writing (30 minutes, 1 prompt)

- Provide a solution to a given problem/prompt
- Essay format
- Writing prompt content objectives
 1. Health issues
 2. Science issues
 3. Social/cultural/political issues
- Sample Prompt:

Aging populations and growing shortages of organ donor supplies result in thousands of deaths each year of people on waiting lists in the U.S. from such conditions as chronic lung disease, kidney failure, and coronary heart disease. Discuss a solution to the problems resulting from insufficient supplies of donated human organs.

PCAT: BIOLOGY

■ Biology (40 minutes, 48 questions)

- General biology
- Microbiology
- Human Anatomy and Physiology
- Sample question: Which sphincter in the G.I. Tract controls movement of chyme from the stomach into the small intestine?
 - a. Cardiac
 - b. Pyloric
 - c. Ileocecal
 - d. Anal

PCAT: CHEMISTRY

■ Chemistry (40 minutes, 48 questions)

- General Chemistry
- Organic Chemistry
- Basic Biochemistry Processes
- Sample Question: What is the product of ethyne with water and H_2SO_4 in HgSO_4 ?
 - a. CH_2CH_2
 - b. CH_3CHO
 - c. CH_3CH_3
 - d. $\text{CH}_3\text{CH}_2\text{OH}$

PCAT: CRITICAL READING

- **Critical Reading (50 minutes, 48 questions)**
 - 3 sections:
 - Comprehension
 - Analysis
 - Evaluation
 - 40% includes interpretation, analysis, and evaluation of passages regarding humanities/social sciences

PCAT: QUANTITATIVE REASONING

■ Quantitative Reasoning (45 minutes, 48 questions)

- Basic Math
- Algebra
- Probability & Statistics
- Pre-Calculus
- Calculus

- 50% involves a practical scenario/situation

*Online standard calculator provided

PCAT SCORING

- Percentile ranks based on new norms (first time test takers from July 2011 - January 2015)
- Writing:
 - 6 point scale
- All else:
 - SS: Scaled score (200-600)
 - PR: Percentile rank (1-99)
- Example: “Biological Processes” SS= 407, PR: 70
- Composite Score provided as well

PCAT: UNIVERSITY OF TORONTO

Minimum PCAT percentile scores required to proceed to Interview stage:

Test section	Minimum Percentile Score requirements used for the four most recent past admission cycles (2014-2017)
Biology (Biological Processes)	20
Chemistry (Chemical Processes)	50
Quantitative Ability (Quantitative Reasoning)	20
Reading Comprehension (Critical Reading)	20
Composite	50
Writing	3

QUESTIONS?

- Samantha Dungca: samnd99@my.yorku.ca
- Anuja Dua: anujadua@my.yorku.ca