

A survey of graduate Astronomy funding throughout Canadian universities

From one coast to the other, Canadian universities offer about 20 different graduate program in astronomy. Each of these institutions have their own tuition fees and funding rules. Most importantly, graduate astronomy programs are offered in cities with vastly different cost of living. Graduate students are, generally speaking, not member of a union when it comes to research (although they can be part of a union as teaching assistant). As such, they are not part of an organization that can help them know what is the situation like elsewhere for graduate students. Furthermore, relevant information tends to be lost quickly due to graduate students spending only a few years at the same place. This led to the present funding survey. Hopefully, it can bring present and future graduate students some relevant information.

The survey itself consists in funding information from 15 different institutions. Cost of living information was obtained from the website Numbeo crowd-sourcing database that include hundreds of entry for each city. References and details are included in the report.

The survey tries to be more comprehensive than previous ones by looking at major expenses for graduate students in each institutions. The categories of expenses included are:

- Full-time domestic tuition*
- Full-time ancillary fees*
- Public transportation
- Housing
- Internet
- Food
- Leisure

*** Quoted tuition and ancillary fees are for full-time students at the start of their degree. Fee reduction can apply after a fixed number of tuition instalments or as the thesis is being written, depending on the institution. Reduced fees schedule and total degree tuition will be included when the data as been compiled.**

A note on international tuition is included when available, but the situation varies between universities. A section is also dedicated to ancillary fees as they vary a lot. Public transportation is included with the tuition fees at most universities but does amount to 500-1000\$ a year when it isn't. For housing, a range is given for each city, the lowest value represents a person living outside of the city core with 2 roommates while the higher value represents someone living alone in the city core. Internet, food and leisure expenses are based on conservative numbers detailed in the survey. Three scenarios are then considered. Housing being the largest single expense, the scenarios are based on the minimum, maximum and average of the housing range. The average housing value obtained is generally in good agreement with what a person should expect to pay to live in the city core with 2 roommates or alone outside of the city core. A measure of the disposable income can then be obtained by combining various funding and expenses scenarios.

Although the first page of the report only summarizes the values for students with minimum funding in an average expenses scenario, more details are available for individual institutions. TA hours and salary included in minimum funding, how much a student can get for an additional TA position (and associated disposable income) and total NSERC funding (and associated disposable income) are given for most of the universities.

Getting a very complete picture of graduate funding is obviously very hard, especially when done on a voluntary basis like it is the case for this survey. The reader should keep in mind that there are limitations to the numbers obtained. For example, the distribution of funding compared to the minimum and the availability of scholarships (NSERC or others) are not included. Students also have to balance other things when deciding where to go, e.g.: research areas, excellence and reputation of the institution and the researchers, availability of supervisors, success of former students, etc.

It is of the opinion of the Graduate Student Committee that this survey should be kept updated and enhanced. It is also clear that the minimum funding situation of graduate astronomy students varies greatly throughout Canada. It should be kept in mind that, although the average funding may show a very different picture, a non-negligible fraction of graduate students have to live on minimum funding. Not having enough money to meet basic needs has been shown to be a huge source of stress. It also excludes individuals who may be capable of contributing in a meaningful way to research but who can't because they either can't afford it or are too stressed to do good work due to finances.

Thank you to all the graduate students, graduate chairs and other department officials that provided the information necessary for the survey. Special thanks to Lisa Glass and Hannah Broekhoven-Fiene for their help putting the survey together.

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Étude sur le financement des programmes gradués en Astronomie dans les universités du Canada

Au total, les universités du Canada offrent environ 20 programmes gradués en astronomie. Chaque institution a différents frais de scolarité et différentes règles pour le financement des étudiants gradués. Plus important encore, les différents programmes sont offerts dans des villes pour lesquelles le coût de la vie varie grandement. Les étudiants gradués ne sont généralement pas membre d'un syndicat en ce qui concerne leurs travaux de recherche (bien qu'ils puissent être membre d'un syndicat due à leur tâche d'enseignement). Cela implique qu'ils ne sont pas membres d'une organisation qui peut les tenir informés de la situation d'autres étudiants gradués ailleurs. De plus, comme les étudiants gradués ne passent guère plus de quelques années au même endroit, l'information acquise tend à être perdue. La présente étude est le résultat de ce manque d'information.

L'étude elle-même comprend l'information sur le financement des étudiants gradués en astronomie de 15 institutions. Le coût de la vie pour chacune des villes universitaires est obtenu du site web Numbeo, une base de données remplie par le public comprenant des centaines de participants dans chaque ville. Les références et de plus amples détails sont inclus dans l'étude.

La présente étude tente d'être plus complète que celles qui ont précédées en regardant les détails des différentes dépenses des étudiants dans chacune des institution. Les catégories incluses sont:

- Frais de scolarité temps-plein*
- Frais afférents temps-plein*
- Transport en commun
- Logement
- Internet
- Nourriture
- Loisirs

*** Les frais inclus sont valides pour les étudiants à temps-plein débutant leur programme. Des réductions de frais peuvent s'appliquer après un nombre prédéterminé de paiements ou au moment de la rédaction de la thèse selon l'institution. Les frais réduits et les totaux des programmes seront inclus lorsque l'information aura été compilée.**

Une note sur les frais de scolarité pour les étudiants internationaux est incluse lorsque disponible. Une section est dédiée aux frais afférents puisqu'ils varient beaucoup. Le transport en commun est inclus avec les frais de scolarité dans la plupart des universités mais s'élève tout de même à 500-1000\$ annuellement lorsque ce n'est pas le cas. Pour chaque ville, un interval est donné pour le coût de logement. La valeur minimale représente une personne vivant en dehors du centre-ville avec 2 colocataires alors que la valeur maximale correspond à une personne vivant seule au coeur de la ville. Les dépenses liées à l'internet, la nourriture et les loisirs sont basées sur un estimé conservateur détaillé dans l'étude. Trois scénarios sont considérés en combinant toutes les catégories. Comme le logement est la plus grande dépense, les scénarios sont basés sur les valeurs minimales, maximales et moyenne des coûts de logement. La valeur moyenne obtenue est généralement en bon accord avec le cas d'une personne vivant seule en dehors du coeur de la ville ou d'une personne vivant au coeur de la ville avec 2 colocataires. Une mesure du revenu disponible est ensuite obtenues en combinant revenus et dépenses.

Bien que la première page du rapport ne résume la situation que pour les étudiants vivant avec le salaire minimum garanti dans un scénario moyen de dépenses, plus de détails sont disponibles pour chaque institutions dans les pages suivantes. Nombre d'heures d'enseignement (et salaire inclus), combien une tâche additionnelle d'enseignement rapporte (et revenu disponible associé) et revenu avec une bourse du CRSNG (avec revenu disponible associé) sont détaillés pour la plupart des institutions.

Construire un portrait complet du financement des études gradués est très complexe, surtout lorsque fait sur une base volontaire comme dans le cas de la présente étude. Le lecteur doit garder à l'esprit les limitations de l'étude. Par exemple, la distribution des salaires autour du salaire minimum garanti et la disponibilité de bourses (CRSNG ou autres) ne sont pas inclus. Les étudiants doivent aussi inclure d'autres aspects lors du choix de l'université où ils entreprendrons un programme gradué comme: les sujets de recherche, l'excellence et la réputation de l'institution et des chercheurs, la disponibilité de superviseurs, le succès d'anciens étudiants, etc.

Il est de l'avis du Comité des Étudiants Gradués que cette étude devrait être tenue à jour et amélioré. Il est aussi clair que le financement minimum varie beaucoup à travers le Canada. Malgré que le financement moyen puisse donner une différente impression, une fraction importante des étudiants gradués doivent vivre avec le financement minimum. Ne pas avoir assez d'argent pour joindre les deux bouts peut être une grande source de stress. Cela à aussi pour effet d'exclure des étudiants qui pourrait être capable de contribuer à la recherche mais qui ne peuvent tout simplement pas se le permettre ou qui sont trop stressés par leur finances pour faire du bon travail.

Merci à tous les étudiants gradués, directeurs et directrices de programmes gradués et autres membres des divers départements qui ont fournis l'information nécessaire à cette étude. Un merci spécial à Lisa Glass et Hannah Broekhoven-Fiene pour leur aide.

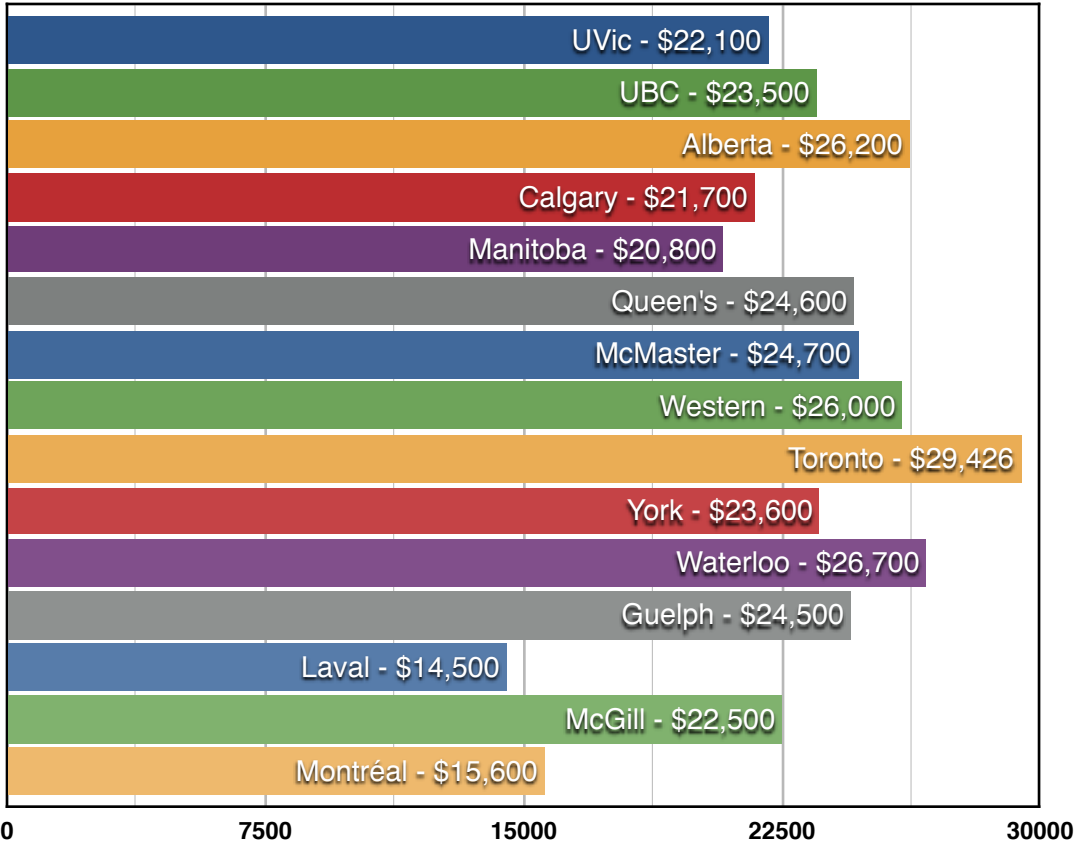
Pour tous commentaires, questions ou une demande de modification, veuillez contacter:

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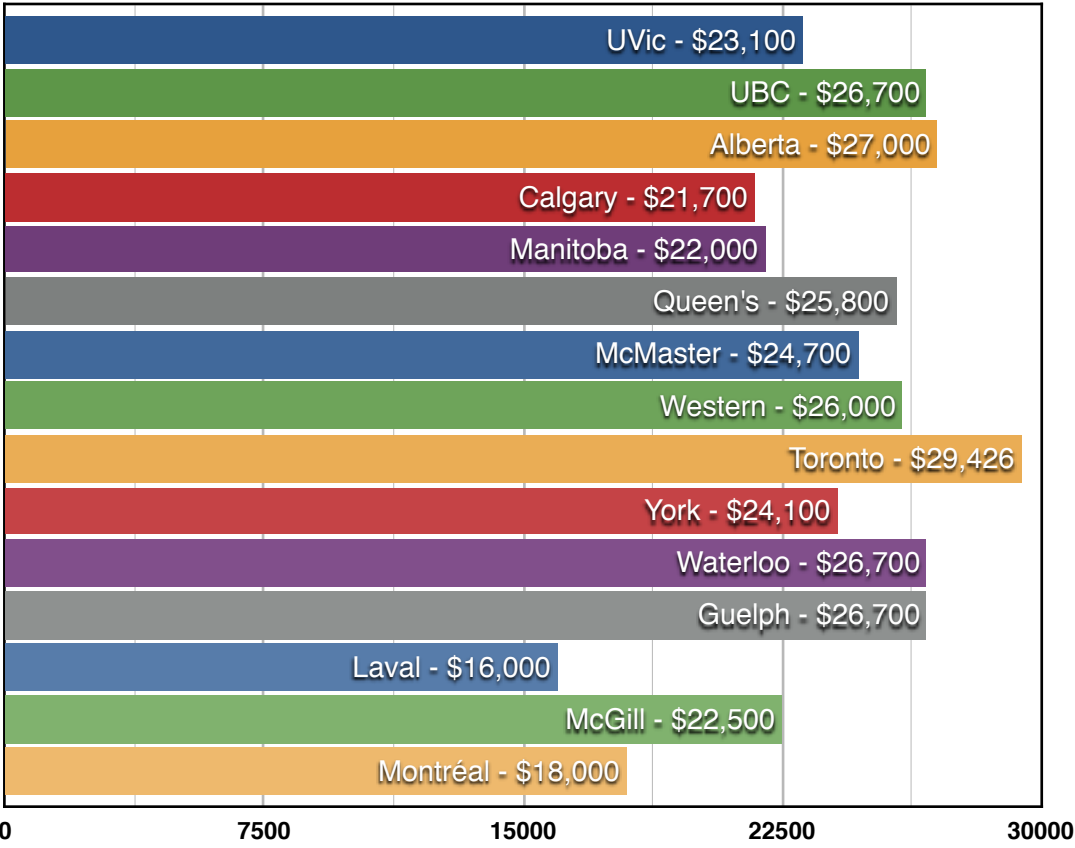
A survey of graduate Astronomy funding throughout Canadian universities

Summary

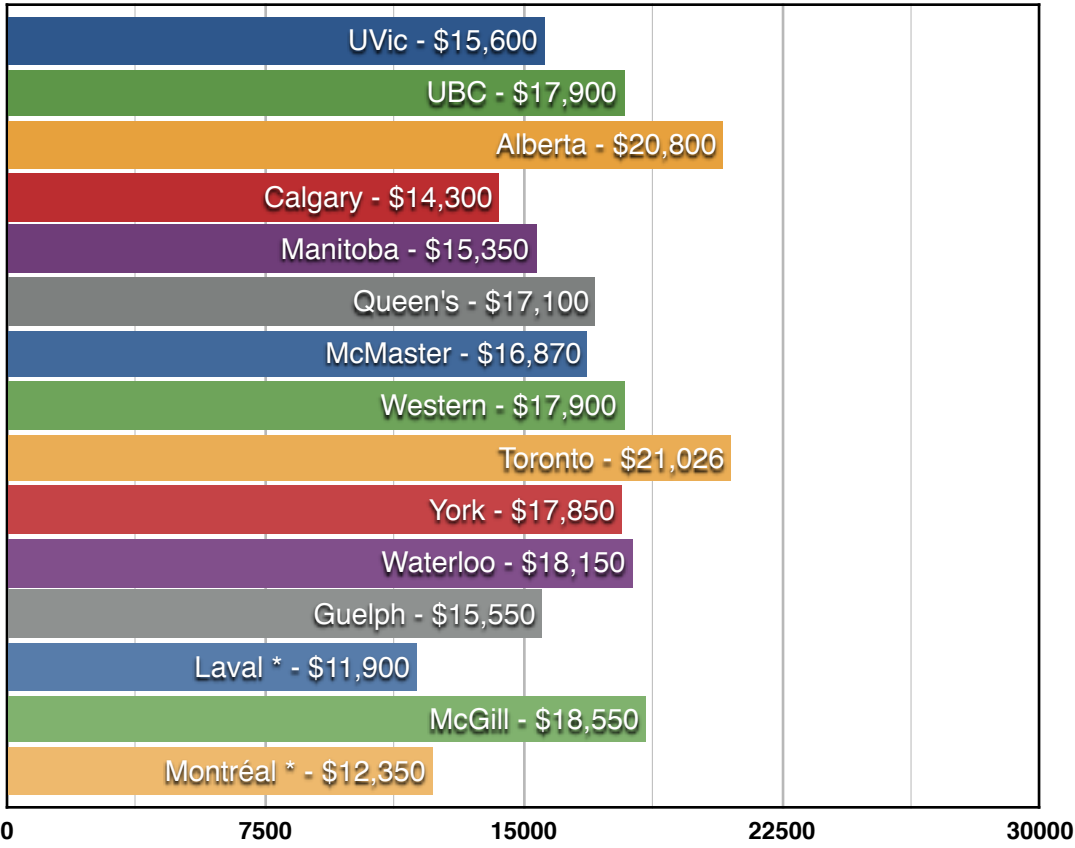
MSc minimum funding



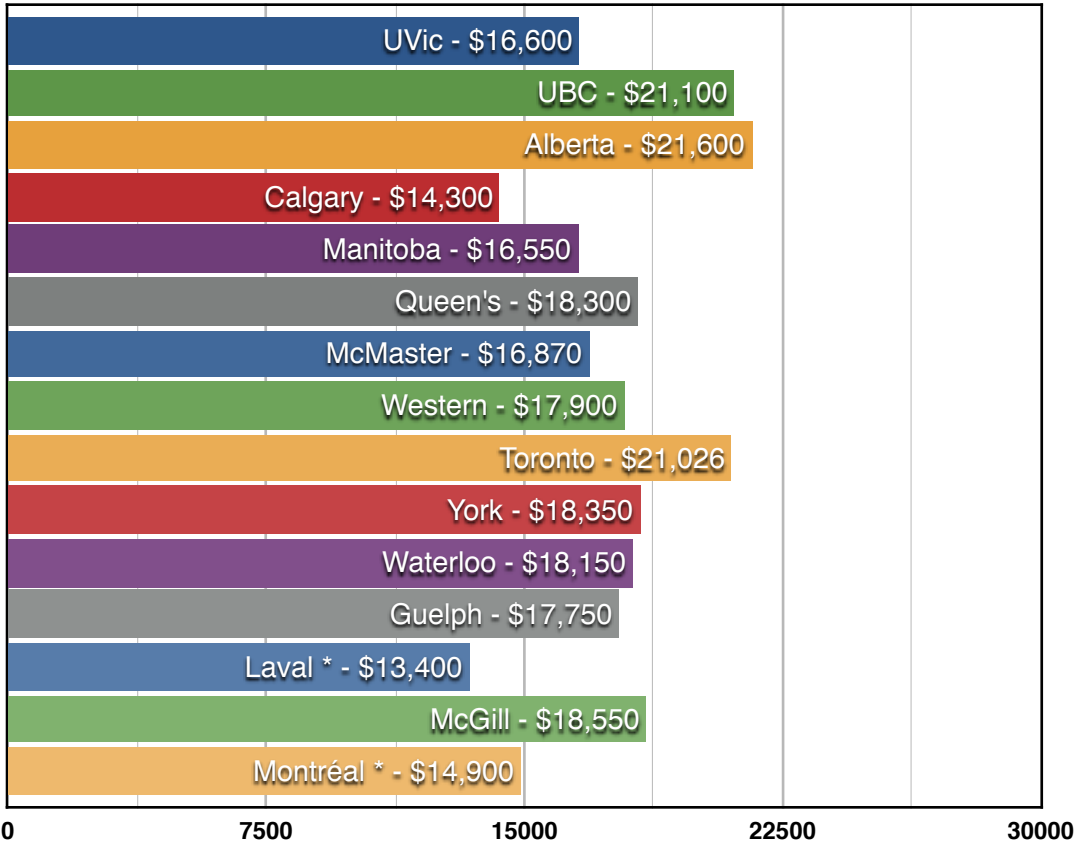
PhD minimum funding



MSc minimum funding after full-time tuition and ancillary fees

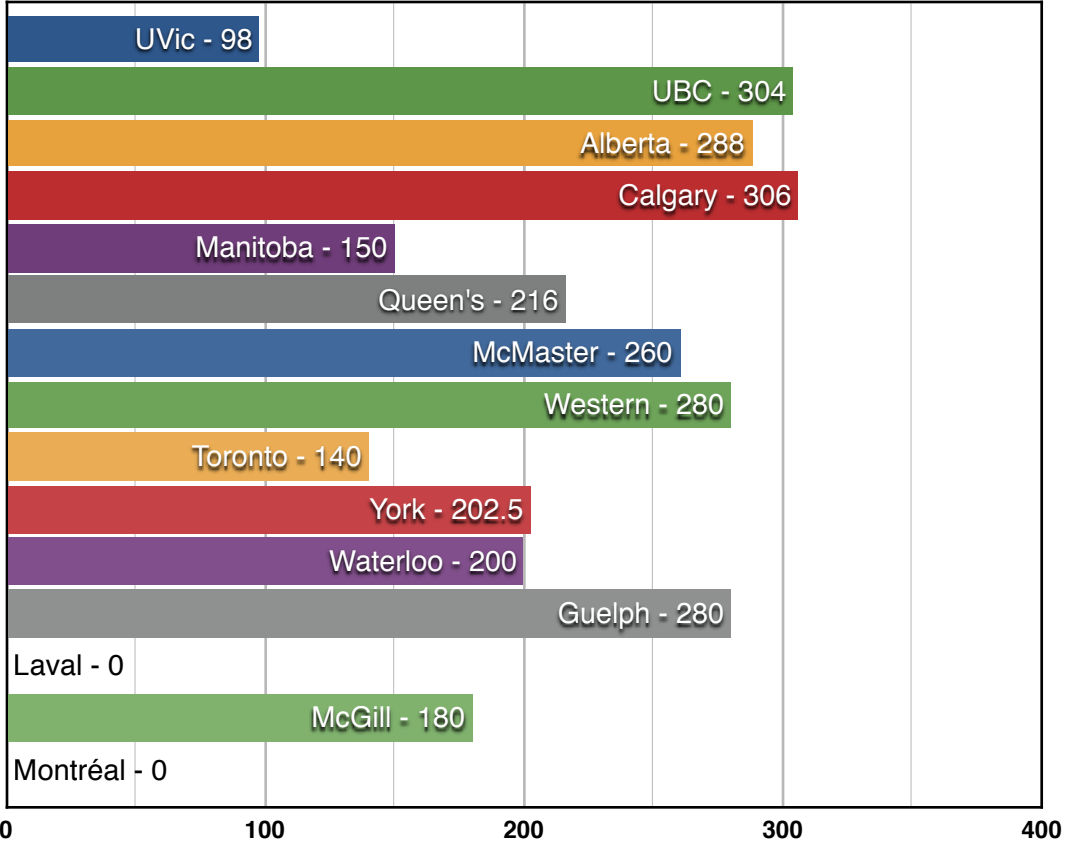


PhD minimum funding after full-time tuition and ancillary fees

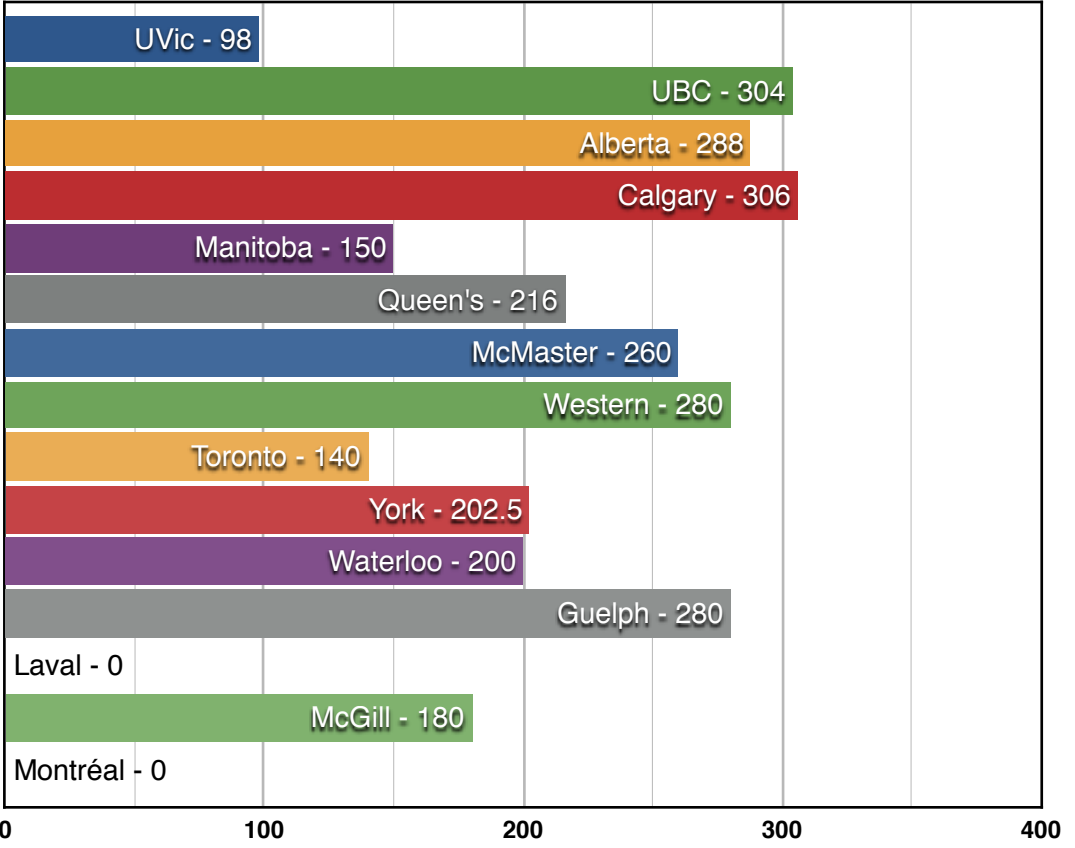


* : Although Laval and Montréal are the only two universities where no TA position is included in minimum funding, they are readily available. To make the comparison more sensible, the values after tuition shown here for Laval and Montréal are for a student with 1 TA position.

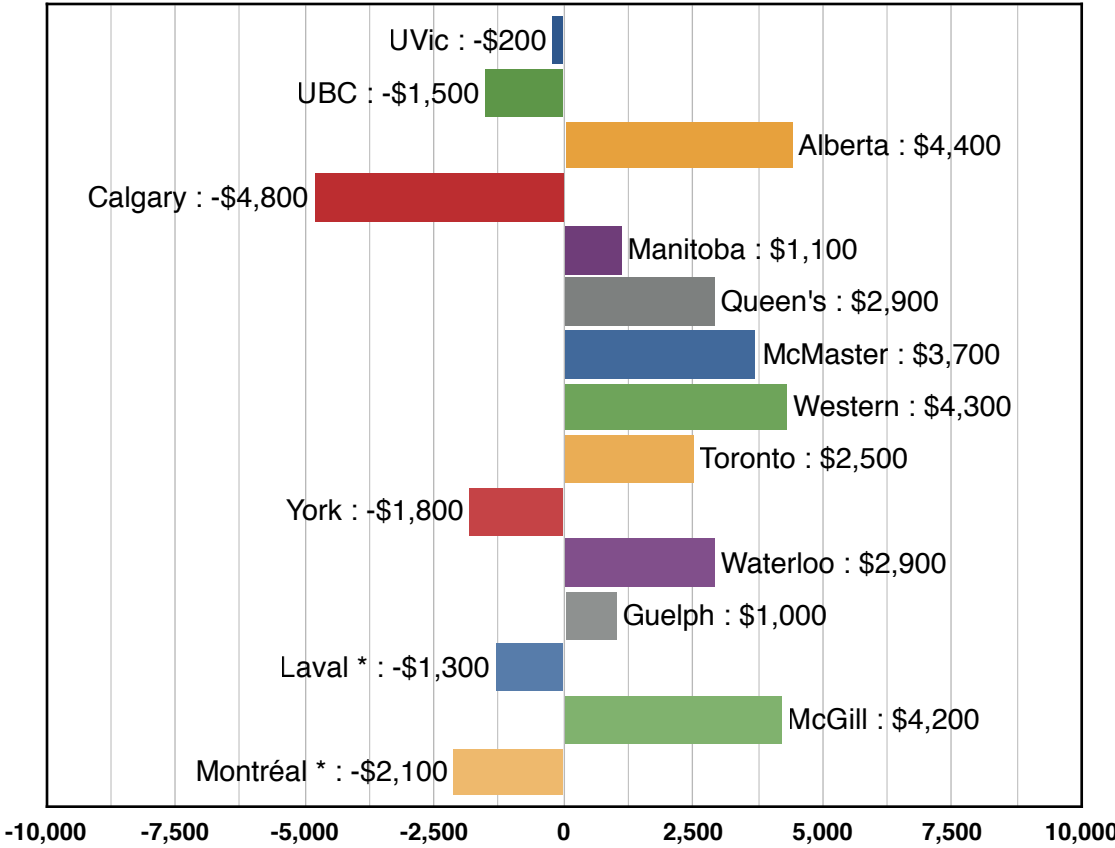
MSc - TA hours included in minimum funding



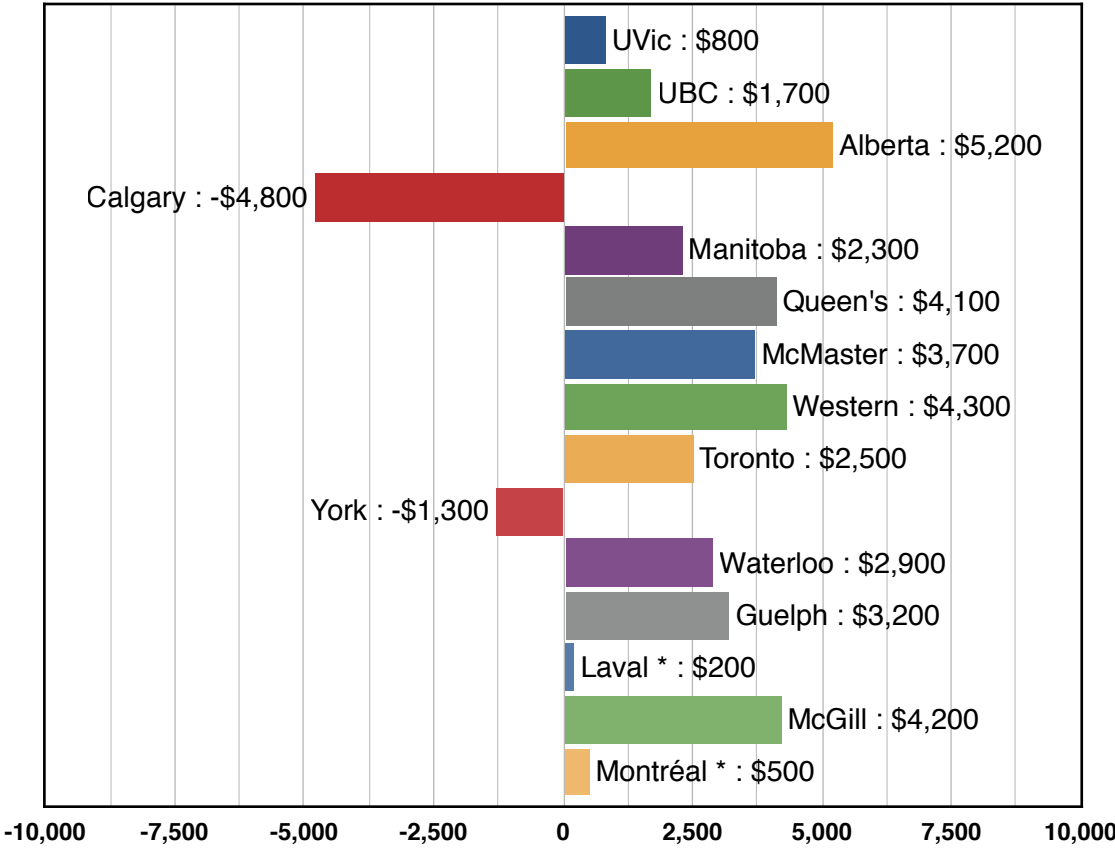
PhD - TA hours included in minimum funding



MSc disposable income - Minimum funding, average expenses scenario for full-time student



PhD disposable income - Minimum funding, average expenses scenario for full-time student



* : Same as earlier, the values of disposable income shown here for Laval and Montréal are for a student with 1 TA position.

Ancillary fees

Tuition fees are a big expense for students, but they don't represent the complete picture of university fees. Graduate students have to pay additional fees for administration, services and health and dental plans. Those fees are very important for students and they may well be unknown to supervisors and faculty members. The situation in Canada is somewhat bimodal. On one side, those fees account amount to an additional 15-25% of tuition fees in universities outside of the province of Québec (except at U of Alberta). That is, the “effective tuition fees” are 115-125% of the quoted tuition.

In Québec, the situation is very different. Tuition in Québec has been “frozen” for part of the last decades until 2007. From 2007 to 2012, tuition in Québec has risen at about twice the inflation rate until 2013 when it became indexed to the inflation (indexation is the most common situation in other Canadian provinces). Québec still has the lowest tuition fees in Canada. While tuition fees themselves were “frozen”, Québec gave the universities the power to collect additional fees starting in 1986. They are known as “frais afférents” and include administrative fees and services. They are equivalent to the ancillary fees in other universities but, from when they were created up to at least 2007, they rose by more than 8% annually on average. This creates a somewhat distorted situation for tuition fees in Québec as, when afferent fees are combined with health and dental plan fees, they represent an amount equal to 40-70% of tuition fees. That is, the “effective tuition fees” are 140-170% of the quoted tuition.

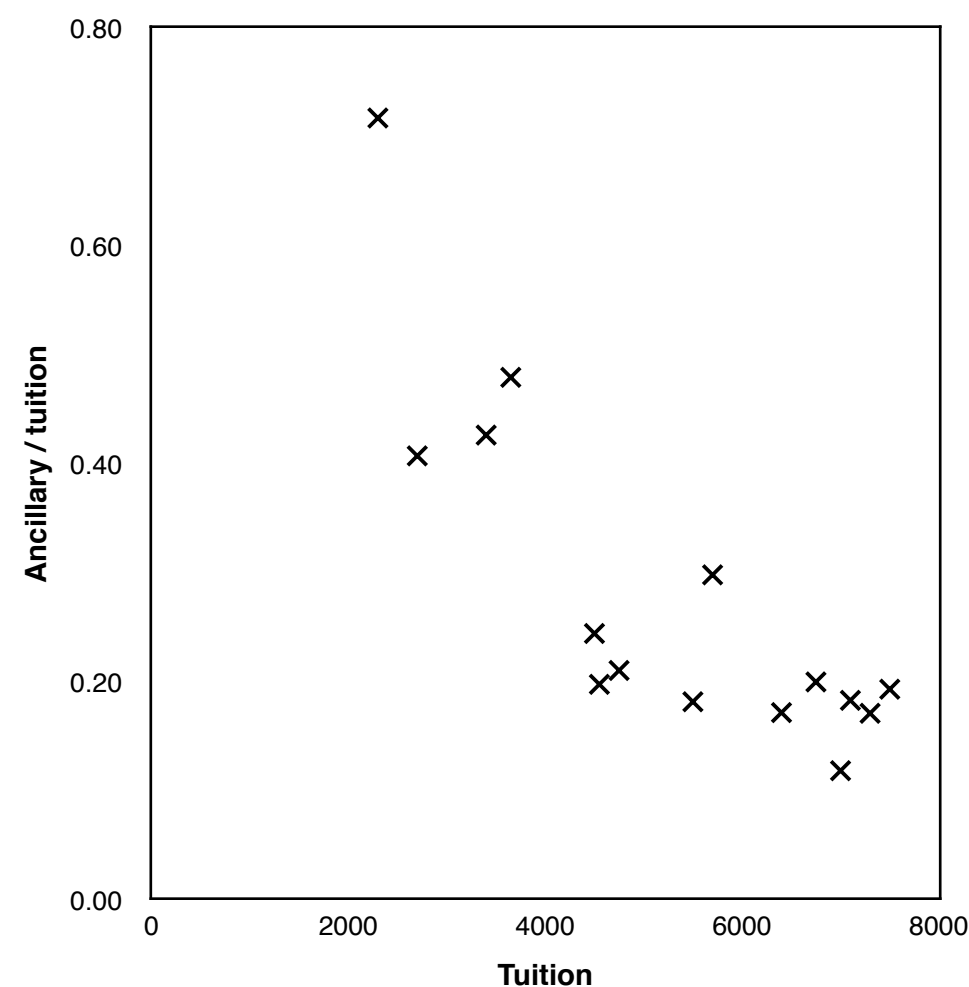
Full-time tuition and ancillary fees table

University	Tuition fees	Ancillary fees	Effective tuition	Ancillary / tuition
UVic	5500	1000	6500	0.18
UBC	4500	1100	5600	0.24
Alberta	3650	1750	5400	0.48
Calgary	5700	1700	7400	0.30
Manitoba	4550	900	5450	0.20
Queen's	6400	1100	7500	0.17
McMaster	7000	830	7830	0.12
Western	6750	1350	8100	0.20
Toronto	7100	1300	8400	0.18
York	4750	1000	5750	0.21
Waterloo	7300	1250	8550	0.17
Guelph	7500	1450	8950	0.19
Laval *	2700	1100	3800	0.41
McGill **	2300	1650	3950	0.72
Montréal *	3400	1450	4850	0.43

* : Same as earlier, the value of disposable income shown here for Laval and Montréal is for a student with 1 TA position.

** : After department subsidies

Fees comparison



University of Victoria / HIA

Funding

	Minimum	NSERC ¹	TA hours included ²	TA included funding	One additional TA
MSc	22100	27100	98	2500	1500
PhD	23100	30600	98	2500	1500

Funding after tuition and ancillary fees

	Minimum	NSERC ¹	One additional TA
MSc	15600	20600	17100
PhD	16600	24100	18100

International

Tuition difference covered	Yearly MSP ⁸
Yes	Covered

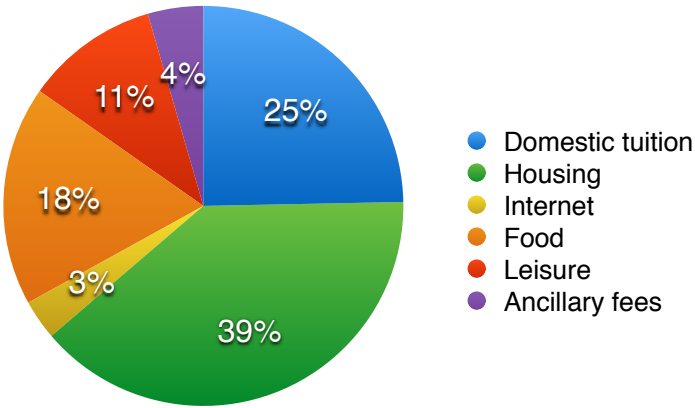
Expenses

	Monthly	Yearly average	Yearly minimum	Yearly maximum
Full-time domestic tuition ³	-	5500	5500	5500
Full-time ancillary fees ⁹	-	1000	1000	1000
Transit	Included			
Housing ^{4, 7}	450-1000	8700	5400	12000
Internet	40-80	720	480	960
Food ^{5, 7}	330	3960	3960	3960
Leisure ^{6, 7}	200	2400	2400	2400

Disposable income (nearest 100\$)

	Scenario	Average expenses	Minimum expenses	Maximum expenses
Msc	Minimum funding	-\$200	\$3,400	-\$3,700
	NSERC	\$4,800	\$8,400	\$1,300
	One additional TA	\$1,300	\$4,900	-\$2,200
PhD	Minimum funding	\$800	\$4,400	-\$2,700
	NSERC	\$8,300	\$11,900	\$4,800
	One additional TA	\$2,300	\$5,900	-\$1,200

Yearly average expenses



Notes

- 1 - First year funding, PhD value is for PGS D only
- 2 - Numbers of paid TA hours included in minimum funding per year.
- 3 - First year domestic tuition
- 4 - Range from shared 3-bedrooms apartment outside of city centre to 1-bedroom in city centre. For most cases, the average is in good agreement with either a 3-bedrooms apartment in the city centre or a 1-bedroom outside of the city centre
- 5 - Groceries, two on-campus meals per week (\$8/meal) and one beverage (tea, coffee) per day (\$2/beverage)
- 6 - Sports club, movies twice a month and restaurant four times a month
- 7 - Source : Crowd-sourced data from www.numbeo.com/cost-of-living/
- 8 - Provincial Medical Service Plan
- 9 - Include : U-Pass, Athletics/Recreation, GSS fees, Health/Dental plan and misc. fees.

Funding reference(s)

- UVic Physics and Astronomy website (11-2014)
- UVic graduate students (11-2014)
- UVic Graduate studies 2015-2016 : <http://web.uvic.ca/calendar2015-05/GRAD/TaOtF/RCTuFfGP.html>

University of British Columbia

Funding

	Minimum	NSERC ¹	TA hours included ²	TA included funding	One additional TA
MSc	23500	25500	304	9100	n/a
PhD	26700	31400	304	9400	n/a

Funding after tuition and ancillary fees

	Minimum	NSERC ¹	One additional TA
MSc	17900	19900	n/a
PhD	21100	25800	n/a

International

Tuition difference covered	Yearly MSP ⁸
Yes	Covered

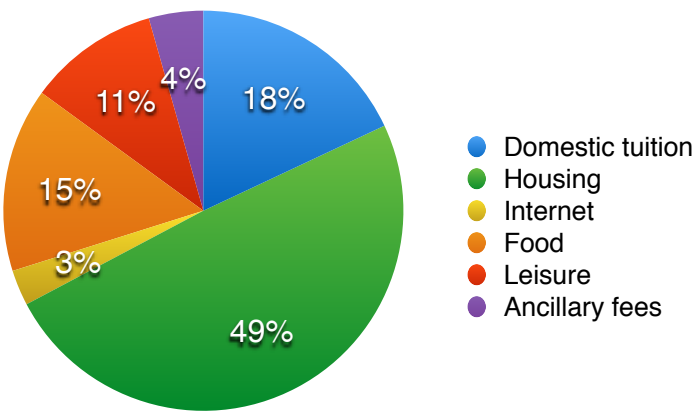
Expenses

	Monthly	Yearly average	Yearly minimum	Yearly maximum
Full-time domestic tuition ³	-	4500	4500	4500
Full-time ancillary fees ⁹	-	1100	1100	1100
Transit	Included			
Housing ^{4, 7}	650-1400	12300	7800	16800
Internet	40-80	720	480	960
Food ^{5, 7}	310	3720	3720	3720
Leisure ^{6, 7}	220	2640	2640	2640

Disposable income (nearest 100\$)

	Scenario	Average expenses	Minimum expenses	Maximum expenses
Msc	Minimum funding	-\$1,500	\$3,300	-\$6,200
	NSERC	\$500	\$5,300	-\$4,200
	One additional TA	n/a	n/a	n/a
PhD	Minimum funding	\$1,700	\$6,500	-\$3,000
	NSERC	\$6,400	\$11,200	\$1,700
	One additional TA	n/a	n/a	n/a

Yearly average expenses



Notes

- 1 - First year funding, PhD value is for PGS D only
- 2 - Numbers of paid TA hours included in minimum funding per year.
- 3 - First year domestic tuition
- 4 - Range from shared 3-bedrooms apartment outside of city centre to 1-bedroom in city centre. For most cases, the average is in good agreement with either a 3-bedrooms apartment in the city centre or a 1-bedroom outside of the city centre
- 5 - Groceries, two on-campus meals per week (\$8/meal) and one beverage (tea, coffee) per day (\$2/beverage)
- 6 - Sports club, movies twice a month and restaurant four times a month
- 7 - Source : Crowd-sourced data from www.numbeo.com/cost-of-living/
- 8 - Provincial Medical Service Plan
- 9 - Include : U-Pass, Athletics/Recreation, GSS fees, Health/Dental plan and misc. fees.

Funding reference(s)

- UBC Physics and Astronomy website (11-2014)
- UBC graduate chair (03-2015)
- UBC Student services 2015-2016 : <http://www.calendar.ubc.ca/vancouver/?tree=14,266,773,1451> and <http://www.calendar.ubc.ca/vancouver/index.cfm?tree=14,267,784,0>

University of Alberta

Funding

	Minimum	NSERC ¹	TA hours included ²	TA included funding	One additional TA
MSc	26200	29200	288	17500	n/a
PhD	27000	35500	288	18000	n/a

Funding after tuition and ancillary fees

	Minimum	NSERC ¹	One additional TA
MSc	20800	23800	n/a
PhD	21600	30100	n/a

International

Tuition difference covered	Yearly MSP ⁸
1st year	Covered

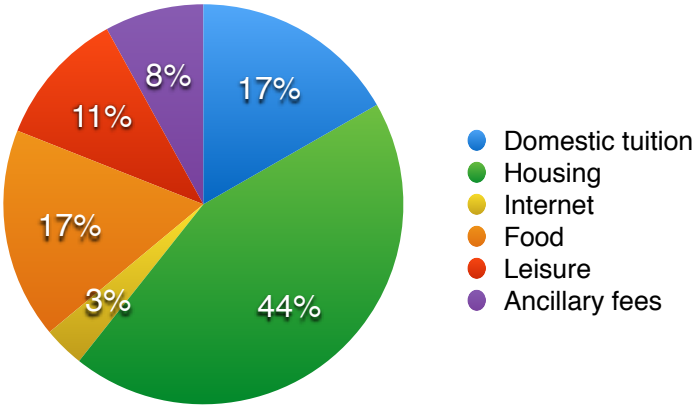
Expenses

	Monthly	Yearly average	Yearly minimum	Yearly maximum
Full-time domestic tuition ³	-	3650	3650	3650
Full-time ancillary fees ⁹	-	1750	1750	1750
Transit	Included			
Housing ^{4, 7}	500-1100	9600	6000	13200
Internet	40-80	720	480	960
Food ^{5, 7}	310	3720	3720	3720
Leisure ^{6, 7}	200	2400	2400	2400

Disposable income (nearest 100\$)

	Scenario	Average expenses	Minimum expenses	Maximum expenses
Msc	Minimum funding	\$4,400	\$8,200	\$500
	NSERC	\$7,400	\$11,200	\$3,500
	One additional TA	n/a	n/a	n/a
PhD	Minimum funding	\$5,200	\$9,000	\$1,300
	NSERC	\$13,700	\$17,500	\$9,800
	One additional TA	n/a	n/a	n/a

Yearly average expenses



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- 5 - Groceries, two on-campus meals per week (\$8/meal) and one beverage (tea, coffee) per day (\$2/beverage)
- 6 - Sports club, movies twice a month and restaurant four times a month
- 7 - Source : Crowd-sourced data from www.numbeo.com/cost-of-living/
- 8 - Provincial Medical Service Plan
- 9 - Include : U-Pass, Athletics/Recreation, GSS fees, Health/Dental plan and misc. fees.

Funding reference(s)

- University of Alberta Physics website (11-2014)
- University of Alberta FGS 2014-2015 : <http://uofa.ualberta.ca/graduate-studies/current-students/tuition-and-fees/fall-winter-fees/canadian-thesis-based-fall-2011-onward>

University of Calgary

Funding

	Minimum	NSERC ^{1, 9}	TA hours included ²	TA included funding	One additional TA
MSc	21700	31000	306	13000	n/a
PhD	21700	31000	306	13000	n/a

Funding after tuition

	Minimum	NSERC ¹	One additional TA
MSc	14300	23600	n/a
PhD	14300	23600	n/a

International

Tuition difference covered	Yearly MSP ⁸
Yes	Covered

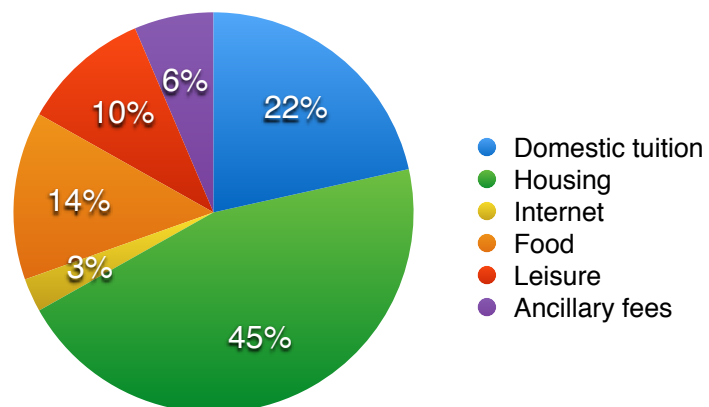
Expenses

	Monthly	Yearly average	Yearly minimum	Yearly maximum
Full-time domestic tuition ³	-	5700	5700	5700
Full-time ancillary fees ⁹	-	1700	1700	1700
Transit	Included			
Housing ^{4, 7}	600-1400	12000	7200	16800
Internet	40-80	720	480	960
Food ^{5, 7}	300	3600	3600	3600
Leisure ^{6, 7}	230	2760	2760	2760

Disposable income (nearest 100\$)

	Scenario	Average expenses	Minimum expenses	Maximum expenses
Msc	Minimum funding	-\$4,800	\$300	-\$9,800
	NSERC	\$4,500	\$9,600	-\$500
	One additional TA	n/a	n/a	n/a
PhD	Minimum funding	-\$4,800	\$300	-\$9,800
	NSERC	\$4,500	\$9,600	-\$500
	One additional TA	n/a	n/a	n/a

Yearly average expenses



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- 7 - Source : Crowd-sourced data from www.numbeo.com/cost-of-living/
- 8 - Provincial Medical Service Plan
- 9 - Include : U-Pass, Athletics/Recreation, GSS fees, Health/Dental plan and misc. fees.

Funding reference(s)

- University of Calgary Physics and Astronomy website (05-2015)
- University of Calgary Graduate 2015-2016 : <http://grad.ucalgary.ca/current/tuition>

University of Manitoba

Funding

	Minimum	NSERC ¹	TA hours included ²	TA included funding	One additional TA
MSc	20800	28000	150	3000	1000
PhD	22000	31500	150	3000	1000

Funding after tuition

	Minimum	NSERC ¹	One additional TA
MSc	15350	22550	16350
PhD	16550	26050	17550

International

Tuition difference covered	Yearly MSP ⁸
Yes	n/a

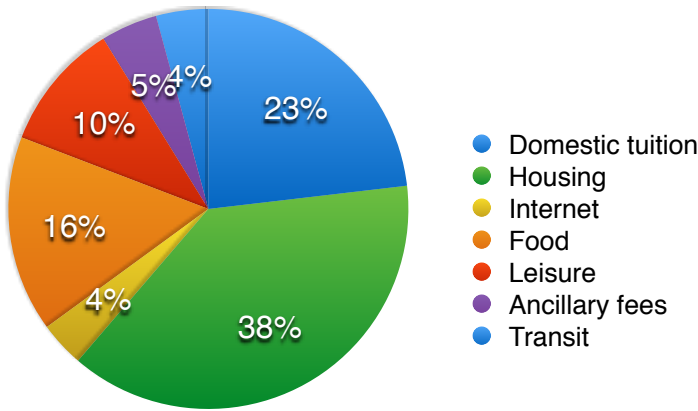
Expenses

	Monthly	Yearly average	Yearly minimum	Yearly maximum
Full-time domestic tuition ³	-	4550	4550	4550
Full-time ancillary fees ⁹	-	900	900	900
Transit	69	830	830	830
Housing ^{4, 7}	400-850	7500	4800	10200
Internet	40-80	720	480	960
Food ^{5, 7}	260	3120	3120	3120
Leisure ^{6, 7}	170	2040	2040	2040

Disposable income (nearest 100\$)

	Scenario	Average expenses	Minimum expenses	Maximum expenses
Msc	Minimum funding	\$1,100	\$4,100	-\$1,800
	NSERC	\$8,300	\$11,300	\$5,400
	One additional TA	\$2,100	\$5,100	-\$800
PhD	Minimum funding	\$2,300	\$5,300	-\$600
	NSERC	\$11,800	\$14,800	\$8,900
	One additional TA	\$3,300	\$6,300	\$400

Yearly average expenses



Notes

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- 9 - Include : U-Pass, Athletics/Recreation, GSS fees, Health/Dental plan and misc. fees.

Funding reference(s)

- University of Manitoba Physics and Astronomy website (11-2014)
- Department administration (03-2015)
- University of Manitoba Registrar's Office 2015-2016 : http://umanitoba.ca/student/records/fee_information_hub.html

Queen’s University

Funding

	Minimum	NSERC ¹	TA hours included ²	TA included funding	One additional TA
MSc	24600	32700	216	4100	4100
PhD	25800	34600	216	4100	4100

Funding after tuition

	Minimum	NSERC ¹	One additional TA
MSc	17100	25200	21200
PhD	18300	27100	22400

International

Tuition difference covered	Yearly MSP ⁸
5000 of 6200	Covered

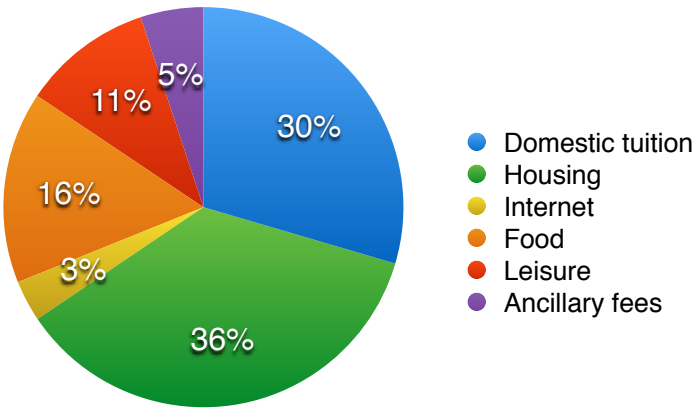
Expenses

	Monthly	Yearly average	Yearly minimum	Yearly maximum
Full-time domestic tuition ³	-	6400	6400	6400
Full-time ancillary fees ⁹	-	1100	1100	1100
Transit	Included			
Housing ^{4, 7}	400-900	7800	4800	10800
Internet	40-80	720	480	960
Food ^{5, 7}	280	3360	3360	3360
Leisure ^{6, 7}	190	2280	2280	2280

Disposable income (nearest 100\$)

	Scenario	Average expenses	Minimum expenses	Maximum expenses
Msc	Minimum funding	\$2,900	\$6,200	-\$300
	NSERC	\$11,000	\$14,300	\$7,800
	One additional TA	\$7,000	\$10,300	\$3,800
PhD	Minimum funding	\$4,100	\$7,400	\$900
	NSERC	\$12,900	\$16,200	\$9,700
	One additional TA	\$8,200	\$11,500	\$5,000

Yearly average expenses



Notes

- 1 - First year funding, PhD value is for PGS D only
- 2 - Numbers of paid TA hours included in minimum funding per year.
- 3 - First year domestic tuition
- 4 - Range from shared 3-bedrooms apartment outside of city centre to 1-bedroom in city centre. For most cases, the average is in good agreement with either a 3-bedrooms apartment in the city centre or a 1-bedroom outside of the city centre
- 5 - Groceries, two on-campus meals per week (\$8/meal) and one beverage (tea, coffee) per day (\$2/beverage)
- 6 - Sports club, movies twice a month and restaurant four times a month
- 7 - Source : Crowd-sourced data from www.numbeo.com/cost-of-living/
- 8 - Provincial Medical Service Plan
- 9 - Include : U-Pass, Athletics/Recreation, GSS fees, Health/Dental plan and misc. fees.

Funding reference(s)

- Queen’s Physics and Astronomy website (11-2014)
- Queen’s graduate students (03-2015)
- Queen’s Registrar website 2015-2016 : <http://www.queensu.ca/registrar/financials/tuition-fees>

McMaster University

Funding

	Minimum	NSERC ¹	TA hours included ²	TA included funding	One additional TA
MSc	24700	32500	260	10700	n/a
PhD	24700	34100	260	10700	n/a

Funding after tuition

	Minimum	NSERC ¹	One additional TA
MSc	16870	24670	n/a
PhD	16870	26270	n/a

International

Tuition difference covered	Yearly MSP ⁸
Yes	700

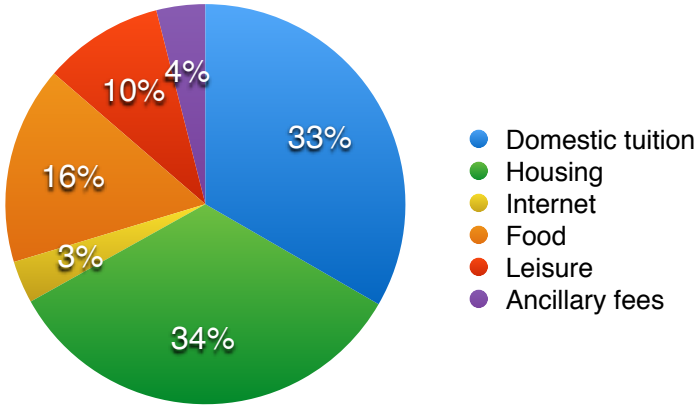
Expenses

	Monthly	Yearly average	Yearly minimum	Yearly maximum
Full-time domestic tuition ³	-	7000	7000	7000
Full-time ancillary fees ⁹	-	830	830	830
Transit	Included			
Housing ^{4, 7}	375-800	7050	4500	9600
Internet	40-80	720	480	960
Food ^{5, 7}	280	3360	3360	3360
Leisure ^{6, 7}	170	2040	2040	2040

Disposable income (nearest 100\$)

	Scenario	Average expenses	Minimum expenses	Maximum expenses
Msc	Minimum funding	\$3,700	\$6,500	\$900
	NSERC	\$11,500	\$14,300	\$8,700
	One additional TA	n/a	n/a	n/a
PhD	Minimum funding	\$3,700	\$6,500	\$900
	NSERC	\$13,100	\$15,900	\$10,300
	One additional TA	n/a	n/a	n/a

Yearly average expenses



Notes

- 1 - First year funding, PhD value is for PGS D only
- 2 - Numbers of paid TA hours included in minimum funding per year.
- 3 - First year domestic tuition
- 4 - Range from shared 3-bedrooms apartment outside of city centre to 1-bedroom in city centre. For most cases, the average is in good agreement with either a 3-bedrooms apartment in the city centre or a 1-bedroom outside of the city centre
- 5 - Groceries, two on-campus meals per week (\$8/meal) and one beverage (tea, coffee) per day (\$2/beverage)
- 6 - Sports club, movies twice a month and restaurant four times a month
- 7 - Source : Crowd-sourced data from www.numbeo.com/cost-of-living/
- 8 - Provincial Medical Service Plan
- 9 - Include : U-Pass, Athletics/Recreation, GSS fees, Health/Dental plan and misc. fees.

Funding reference(s)

- McMaster graduate students (03-2015)
- Department administration (04-2015)
- McMaster Financial 2014-2015 : <http://www.mcmaster.ca/bms/student/>

University of Western Ontario

Funding

	Minimum	NSERC ¹	TA hours included ²	TA included funding	One additional TA
MSc	26000	n/a	280	n/a	n/a
PhD	26000	n/a	280	n/a	n/a

Funding after tuition

	Minimum	NSERC ¹	One additional TA
MSc	17900	n/a	n/a
PhD	17900	n/a	n/a

International

Tuition difference covered	Yearly MSP ⁸
Yes	n/a

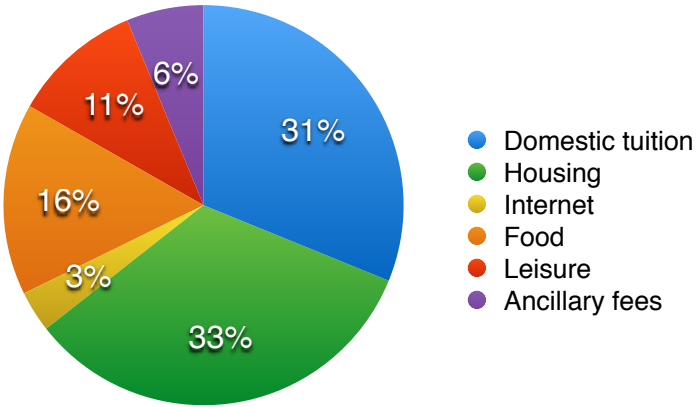
Expenses

	Monthly	Yearly average	Yearly minimum	Yearly maximum
Full-time domestic tuition ³	-	6750	6750	6750
Full-time ancillary fees ⁹	-	1350	1350	1350
Transit	included			
Housing ^{4, 7}	350-850	7200	4200	10200
Internet	40-80	720	480	960
Food ^{5, 7}	280	3360	3360	3360
Leisure ^{6, 7}	190	2280	2280	2280

Disposable income (nearest 100\$)

	Scenario	Average expenses	Minimum expenses	Maximum expenses
Msc	Minimum funding	\$4,300	\$7,600	\$1,100
	NSERC	n/a	n/a	n/a
	One additional TA	n/a	n/a	n/a
PhD	Minimum funding	\$4,300	\$7,600	\$1,100
	NSERC	n/a	n/a	n/a
	One additional TA	n/a	n/a	n/a

Yearly average expenses



Notes

- 1 - First year funding, PhD value is for PGS D only
- 2 - Numbers of paid TA hours included in minimum funding per year.
- 3 - First year domestic tuition
- 4 - Range from shared 3-bedrooms apartment outside of city centre to 1-bedroom in city centre. For most cases, the average is in good agreement with either a 3-bedrooms apartment in the city centre or a 1-bedroom outside of the city centre
- 5 - Groceries, two on-campus meals per week (\$8/meal) and one beverage (tea, coffee) per day (\$2/beverage)
- 6 - Sports club, movies twice a month and restaurant four times a month
- 7 - Source : Crowd-sourced data from www.numbeo.com/cost-of-living/
- 8 - Provincial Medical Service Plan
- 9 - Include : U-Pass, Athletics/Recreation, GSS fees, Health/Dental plan and misc. fees.

Funding reference(s)

- UWO grad chair (03-2015)
- UWO Registrar website 2014-2015 : http://www.registrar.uwo.ca/student_finances/fees_refunds/fee_schedules.html

University of Toronto

Funding

	Minimum	NSERC ¹	TA hours included ²	TA included funding	One additional TA
MSc	29426	34426	140	6225	3112
PhD	29426	34426	140	6225	3112

Funding after tuition

	Minimum	NSERC ¹	One additional TA
MSc	21026	26026	24138
PhD	21026	26026	24138

International

Tuition difference covered	Yearly MSP ⁸
Yes	Covered

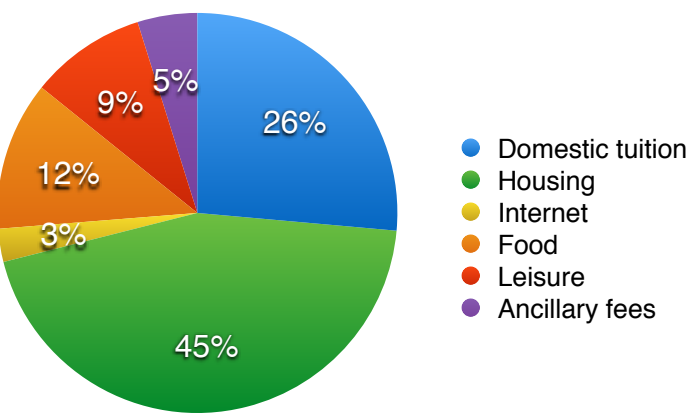
Expenses

	Monthly	Yearly average	Yearly minimum	Yearly maximum
Full-time domestic tuition ³	-	7100	7100	7100
Full-time ancillary fees ⁹	-	1300	1300	1300
Transit	Included			
Housing ^{4, 7}	600-1400	12000	7200	16800
Internet	40-80	720	480	960
Food ^{5, 7}	270	3240	3240	3240
Leisure ^{6, 7}	210	2520	2520	2520

Disposable income (nearest 100\$)

	Scenario	Average expenses	Minimum expenses	Maximum expenses
Msc	Minimum funding	\$2,500	\$7,600	-\$2,500
	NSERC	\$7,500	\$12,600	\$2,500
	One additional TA	\$5,600	\$10,700	\$600
PhD	Minimum funding	\$2,500	\$7,600	-\$2,500
	NSERC	\$7,500	\$12,600	\$2,500
	One additional TA	\$5,600	\$10,700	\$600

Yearly average expenses



Notes

- 1 - First year funding, PhD value is for PGS D only
- 2 - Numbers of paid TA hours included in minimum funding per year.
- 3 - First year domestic tuition
- 4 - Range from shared 3-bedrooms apartment outside of city centre to 1-bedroom in city centre. For most cases, the average is in good agreement with either a 3-bedrooms apartment in the city centre or a 1-bedroom outside of the city centre
- 5 - Groceries, two on-campus meals per week (\$8/meal) and one beverage (tea, coffee) per day (\$2/beverage)
- 6 - Sports club, movies twice a month and restaurant four times a month
- 7 - Source : Crowd-sourced data from www.numbeo.com/cost-of-living/
- 8 - Provincial Medical Service Plan
- 9 - Include : U-Pass, Athletics/Recreation, GSS fees, Health/Dental plan and misc. fees.

Funding reference(s)

- UofT Astronomy and Astrophysics website (05-2015)
- Department communications (05-2015)
- UofT School of Graduate studies website 2014-2015 : <http://www.sgs.utoronto.ca/currentstudents/Pages/Graduate-Fees.aspx>

York University

Funding

	Minimum	NSERC ¹	TA hours included ²	TA included funding	One additional TA
MSc	23600	27500	202.5	n/a	up to 3568
PhD	24100	27500	202.5	n/a	up to 3568

Funding after tuition

	Minimum	NSERC ¹	One additional TA
MSc	17850	21750	21418
PhD	18350	21750	21918

International

Tuition difference covered	Yearly MSP ⁸
4800 of 7000 before 2014	Covered
0 of 14500/13500 since 2014	

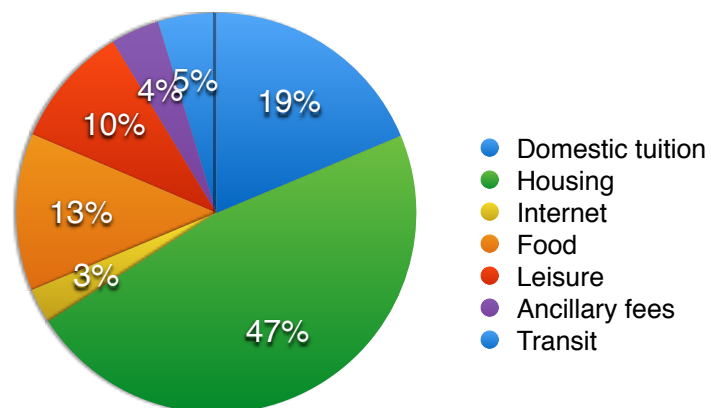
Expenses

	Monthly	Yearly average	Yearly minimum	Yearly maximum
Full-time domestic tuition ³	-	4750	4750	4750
Full-time ancillary fees ⁹	-	1000	1000	1000
Transit	100	1200	1200	1200
Housing ^{4, 7}	600-1400	12000	7200	16800
Internet	40-80	720	480	960
Food ^{5, 7}	270	3240	3240	3240
Leisure ^{6, 7}	210	2520	2520	2520

Disposable income (nearest 100\$)

	Scenario	Average expenses	Minimum expenses	Maximum expenses
Msc	Minimum funding	-\$1,800	\$3,200	-\$6,900
	NSERC	\$2,100	\$7,100	-\$3,000
	One additional TA	1768	6768	-3332
PhD	Minimum funding	-\$1,300	\$3,700	-\$6,400
	NSERC	\$2,100	\$7,100	-\$3,000
	One additional TA	2268	7268	-2832

Yearly average expenses



Notes

- 1 - First year funding, PhD value is for PGS D only
- 2 - Numbers of paid TA hours included in minimum funding per year.
- 3 - First year domestic tuition
- 4 - Range from shared 3-bedrooms apartment outside of city centre to 1-bedroom in city centre. For most cases, the average is in good agreement with either a 3-bedrooms apartment in the city centre or a 1-bedroom outside of the city centre
- 5 - Groceries, two on-campus meals per week (\$8/meal) and one beverage (tea, coffee) per day (\$2/beverage)
- 6 - Sports club, movies twice a month and restaurant four times a month
- 7 - Source : Crowd-sourced data from www.numbeo.com/cost-of-living/
- 8 - Provincial Medical Service Plan
- 9 - Include : Athletics/Recreation, GSS fees, Health/Dental plan and misc. fees.

Funding reference(s)

- York University Physics and Astronomy website (11-2014)
- York Physics and Astronomy Graduate Director (03-2015)
- YorkU Financial services 2014-2015 : <http://sfs.yorku.ca/fees/courses/>
- YorkU Student Federation : <http://www.yfs.ca/health-and-dental>

University of Waterloo

Funding

	Minimum	NSERC ¹	TA hours included ²	TA included funding	One additional TA
MSc	26700	27500	200	4000	n/a
PhD	26700	31000	200	4000	n/a

Funding after tuition

	Minimum	NSERC ¹	One additional TA
MSc	18150	18950	n/a
PhD	18150	22450	n/a

International

Tuition difference covered	Yearly MSP ⁸
Yes	Included

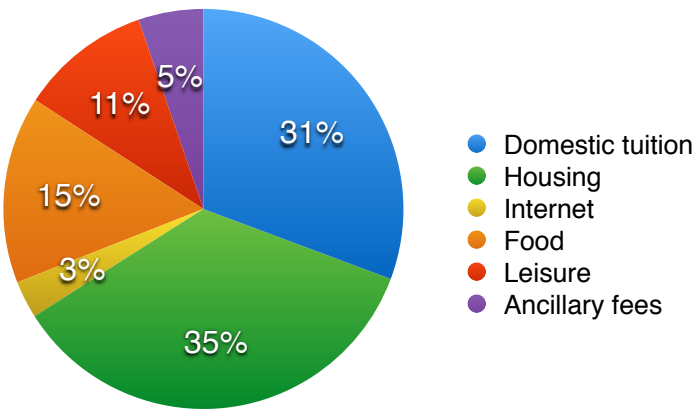
Expenses

	Monthly	Yearly average	Yearly minimum	Yearly maximum
Full-time domestic tuition ³	-	7300	7300	7300
Full-time ancillary fees ⁹	-	1250	1250	1250
Transit	Included			
Housing ^{4, 7}	450-950	8400	5400	11400
Internet	40-80	720	480	960
Food ^{5, 7}	300	3600	3600	3600
Leisure ^{6, 7}	210	2520	2520	2520

Disposable income (nearest 100\$)

	Scenario	Average expenses	Minimum expenses	Maximum expenses
Msc	Minimum funding	\$2,900	\$6,200	-\$300
	NSERC	\$3,700	\$7,000	\$500
	One additional TA	n/a	n/a	n/a
PhD	Minimum funding	\$2,900	\$6,200	-\$300
	NSERC	\$7,200	\$10,500	\$4,000
	One additional TA	n/a	n/a	n/a

Yearly average expenses



Notes

- 1 - First year funding, PhD value is for PGS D only
- 2 - Numbers of paid TA hours included in minimum funding per year.
- 3 - First year domestic tuition
- 4 - Range from shared 3-bedrooms apartment outside of city centre to 1-bedroom in city centre. For most cases, the average is in good agreement with either a 3-bedrooms apartment in the city centre or a 1-bedroom outside of the city centre
- 5 - Groceries, two on-campus meals per week (\$8/meal) and one beverage (tea, coffee) per day (\$2/beverage)
- 6 - Sports club, movies twice a month and restaurant four times a month
- 7 - Source : Crowd-sourced data from www.numbeo.com/cost-of-living/
- 8 - Provincial Medical Service Plan
- 9 - Include : U-Pass, Athletics/Recreation, GSS fees, Health/Dental plan and misc. fees.

Funding reference(s)

- GWPI website (11-2014)
- GWPI communications (03-2015)
- University of Waterloo Finance website 2014-2015 : <https://uwaterloo.ca/finance/student-accounts/tuition-fee-schedules>

University of Guelph

Funding

	Minimum	NSERC ¹	TA hours included ²	TA included funding	One additional TA
MSc	24500	35000	280	n/a	n/a
PhD	26700	40700	280	n/a	n/a

Funding after tuition

	Minimum	NSERC ¹	One additional TA
MSc	15550	26050	n/a
PhD	17750	31750	n/a

International

Tuition difference covered	Yearly MSP ⁸
Yes	Included

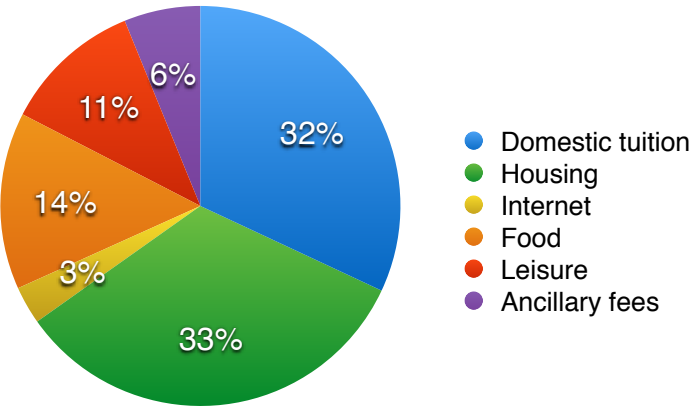
Expenses

	Monthly	Yearly average	Yearly minimum	Yearly maximum
Full-time domestic tuition ³	-	7500	7500	7500
Full-time ancillary fees ⁹	-	1450	1450	1450
Transit	Included			
Housing ^{4, 7}	450-850	7800	5400	10200
Internet	40-80	720	480	960
Food ^{5, 7}	280	3360	3360	3360
Leisure ^{6, 7}	220	2640	2640	2640

Disposable income (nearest 100\$)

	Scenario	Average expenses	Minimum expenses	Maximum expenses
Msc	Minimum funding	\$1,000	\$3,700	-\$1,600
	NSERC	\$11,500	\$14,200	\$8,900
	One additional TA	n/a	n/a	n/a
PhD	Minimum funding	\$3,200	\$5,900	\$600
	NSERC	\$17,200	\$19,900	\$14,600
	One additional TA	n/a	n/a	n/a

Yearly average expenses



Notes

- 1 - First year funding, PhD value is for PGS D only
- 2 - Numbers of paid TA hours included in minimum funding per year.
- 3 - First year domestic tuition
- 4 - Range from shared 3-bedrooms apartment outside of city centre to 1-bedroom in city centre. For most cases, the average is in good agreement with either a 3-bedrooms apartment in the city centre or a 1-bedroom outside of the city centre
- 5 - Groceries, two on-campus meals per week (\$8/meal) and one beverage (tea, coffee) per day (\$2/beverage)
- 6 - Sports club, movies twice a month and restaurant four times a month
- 7 - Source : Crowd-sourced data from www.numbeo.com/cost-of-living/
- 8 - Provincial Medical Service Plan
- 9 - Include : U-Pass, Athletics/Recreation, GSS fees, Health/Dental plan and misc. fees.

Funding reference(s)

- GWPI website (11-2014)
- GWPI communications (03-2015)
- University of Guelph Registrar website 2014-2015 : https://www.uoguelph.ca/registrar/studentfinance/fees/guelph_gr

Laval University / Université Laval

Funding

	Minimum	NSERC ¹	TA hours included ²	TA included funding	One additional TA
MSc	14500	17500	0	0	1200
PhD	16000	21000	0	0	1200

Funding after tuition

	Minimum	NSERC ¹	One additional TA
MSc	10700	13700	11900
PhD	12200	17200	13400

International

Tuition difference covered	Yearly MSP ⁸
No ⁹	1000 ⁹

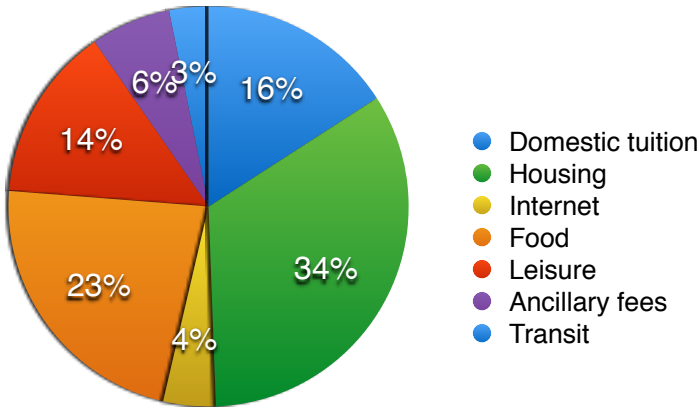
Expenses

	Monthly	Yearly average	Yearly minimum	Yearly maximum
Full-time domestic tuition ³	-	2700	2700	2700
Full-time ancillary fees ¹⁰	-	1100	1100	1100
Transit	45	540	540	540
Housing ^{4, 7}	300-650	5700	3600	7800
Internet	40-80	720	480	960
Food ^{5, 7}	320	3840	3840	3840
Leisure ^{6, 7}	200	2400	2400	2400

Disposable income (nearest 100\$)

	Scenario	Average expenses	Minimum expenses	Maximum expenses
Msc	Minimum funding	-\$2,500	-\$200	-\$4,800
	NSERC	\$500	\$2,800	-\$1,800
	One additional TA	-\$1,300	\$1,000	-\$3,600
PhD	Minimum funding	-\$1,000	\$1,300	-\$3,300
	NSERC	\$4,000	\$6,300	\$1,700
	One additional TA	\$200	\$2,500	-\$2,100

Yearly average expenses



Notes

- 1 - First year funding, PhD value is for PGS D only
- 2 - Numbers of paid TA hours included in minimum funding per year.
- 3 - First year domestic tuition
- 4 - Range from shared 3-bedrooms apartment outside of city centre to 1-bedroom in city centre. For most cases, the average is in good agreement with either a 3-bedrooms apartment in the city centre or a 1-bedroom outside of the city centre
- 5 - Groceries, two on-campus meals per week (\$8/meal) and one beverage (tea, coffee) per day (\$2/beverage)
- 6 - Sports club, movies twice a month and restaurant four times a month
- 7 - Source : Crowd-sourced data from www.numbeo.com/cost-of-living/
- 8 - Provincial Medical Service Plan
- 9 - Some Francophonie countries have agreements with the government of Quebec giving them access to the same tuition fees and free health coverage
- 10 - Full-time equivalent. Include : Athletics/Recreation, GSS fees, Health/Dental plan and misc. fees.

Funding reference(s)

- Laval University graduate students (11-2014)
- Laval University Finance Services website 2014-2015 : <http://www2.ulaval.ca/les-etudes/droits-de-scolarite/calcul-des-droits-et-des-frais-de-scolarite/etudiant-quebecois.html>
- AELIES Health and Dental 2014-2015 : <http://www.aelies.ulaval.ca/services/assurance-collective-aseq>

McGill University

Funding

	Minimum	NSERC ¹	TA hours included ²	TA included funding	One additional TA
MSc	22500	28800	180	4800	n/a
PhD	22500	32300	180	4800	n/a

Funding after tuition

	Minimum	NSERC ¹	One additional TA
MSc	18550	24850	n/a
PhD	18550	28350	n/a

International

Tuition difference covered	Yearly MSP ⁸
Yes ⁹	1000 ⁹

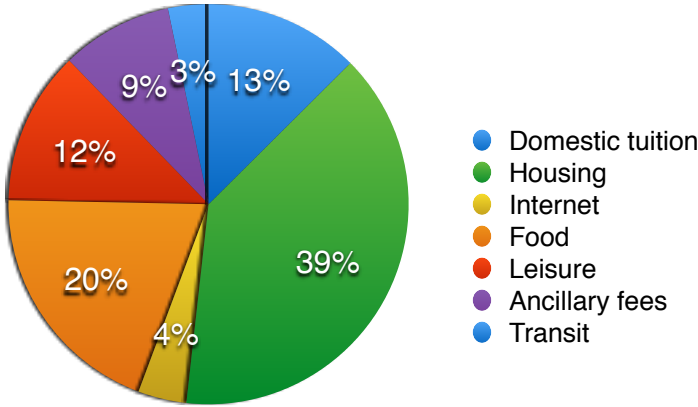
Expenses

	Monthly	Yearly average	Yearly minimum	Yearly maximum
Full-time domestic tuition ^{3, 10}	-	2300	2300	2300
Full-time ancillary fees ¹¹	-	1650	1650	1650
Transit	50	600	600	600
Housing ^{4, 7}	350-850	7200	4200	10200
Internet	40-80	720	480	960
Food ^{5, 7}	300	3600	3600	3600
Leisure ^{6, 7}	190	2280	2280	2280

Disposable income (nearest 100\$)

	Scenario	Average expenses	Minimum expenses	Maximum expenses
Msc	Minimum funding	\$4,200	\$7,400	\$900
	NSERC	\$10,500	\$13,700	\$7,200
	One additional TA	n/a	n/a	n/a
PhD	Minimum funding	\$4,200	\$7,400	\$900
	NSERC	\$14,000	\$17,200	\$10,700
	One additional TA	n/a	n/a	n/a

Yearly average expenses



Notes

- 1 - First year funding, PhD value is for PGS D only
- 2 - Numbers of paid TA hours included in minimum funding per year.
- 3 - First year domestic tuition
- 4 - Range from shared 3-bedrooms apartment outside of city centre to 1-bedroom in city centre. For most cases, the average is in good agreement with either a 3-bedrooms apartment in the city centre or a 1-bedroom outside of the city centre
- 5 - Groceries, two on-campus meals per week (\$8/meal) and one beverage (tea, coffee) per day (\$2/beverage)
- 6 - Sports club, movies twice a month and restaurant four times a month
- 7 - Source : Crowd-sourced data from www.numbeo.com/cost-of-living/
- 8 - Provincial Medical Service Plan
- 9 - Some Francophonie countries have agreements with the government of Quebec giving them access to the same tuition fees and free health coverage
- 10 - After department subsidies
- 11 - Include : Athletics/Recreation, GSS fees, Health/Dental plan and misc. fees.

Funding reference(s)

- McGill Physics website (11-2014)
- McGill Student Account website 2014-2015 : <http://www.mcgill.ca/student-accounts/tuition-charges/fallwinter-term-tuition-and-fees/graduate-fees>

University of Montréal / Université de Montréal

Funding

	Minimum	NSERC ¹	TA hours included ²	TA included funding	One additional TA
MSc	15600	21500	0	0	1600
PhD	18000	25000	0	0	1750

Funding after tuition

	Minimum	NSERC ¹	One additional TA
MSc	10750	16650	12350
PhD	13150	20150	14900

International

Tuition difference covered	Yearly MSP ⁸
Merit awarded ⁹	1000 ⁹

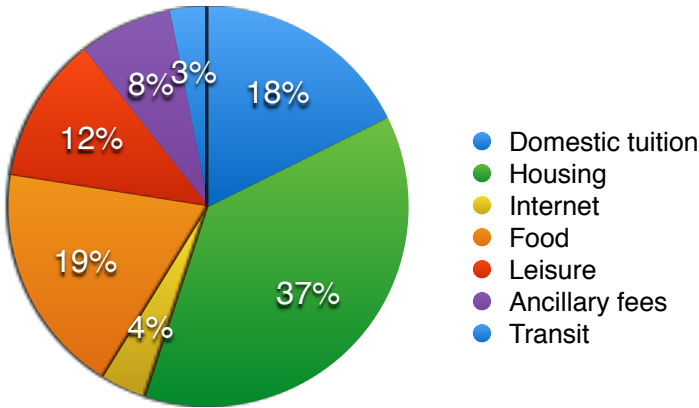
Expenses

	Monthly	Yearly average	Yearly minimum	Yearly maximum
Full-time domestic tuition ³	-	3400	3400	3400
Full-time ancillary fees ¹⁰	-	1450	1450	1450
Transit	50	600	600	600
Housing ^{4, 7}	350-850	7200	4200	10200
Internet	40-80	720	480	960
Food ^{5, 7}	300	3600	3600	3600
Leisure ^{6, 7}	190	2280	2280	2280

Disposable income (nearest 100\$)

	Scenario	Average expenses	Minimum expenses	Maximum expenses
Msc	Minimum funding	-\$3,700	-\$400	-\$6,900
	NSERC	\$2,300	\$5,500	-\$1,000
	One additional TA	-\$2,100	\$1,200	-\$5,300
PhD	Minimum funding	-\$1,300	\$2,000	-\$4,500
	NSERC	\$5,800	\$9,000	\$2,500
	One additional TA	\$500	\$3,800	-\$2,800

Yearly average expenses



Notes

- 1 - First year funding, PhD value is for PGS D only
- 2 - Numbers of paid TA hours included in minimum funding per year.
- 3 - First year domestic tuition
- 4 - Range from shared 3-bedrooms apartment outside of city centre to 1-bedroom in city centre. For most cases, the average is in good agreement with either a 3-bedrooms apartment in the city centre or a 1-bedroom outside of the city centre
- 5 - Groceries, two on-campus meals per week (\$8/meal) and one beverage (tea, coffee) per day (\$2/beverage)
- 6 - Sports club, movies twice a month and restaurant four times a month
- 7 - Source : Crowd-sourced data from www.numbeo.com/cost-of-living/
- 8 - Provincial Medical Service Plan
- 9 - Some Francophonie countries have agreements with the government of Quebec giving them access to the same tuition fees and free health coverage
- 10 - Full-time equivalent. Include : Athletics/Recreation, GSS fees, Health/Dental plan and misc. fees.

Funding reference(s)

- University of Montréal Physics website (11-2014)
- University of Montréal graduate students (01-2015)
- University of Montréal website 2014-2015 : <http://www.etudes.umontreal.ca/payer-etudes/droit-scolaire.html>
- FAECUM Health and Dental 2014-2015 : <http://www.faecum.qc.ca/services/assurances-aseq>