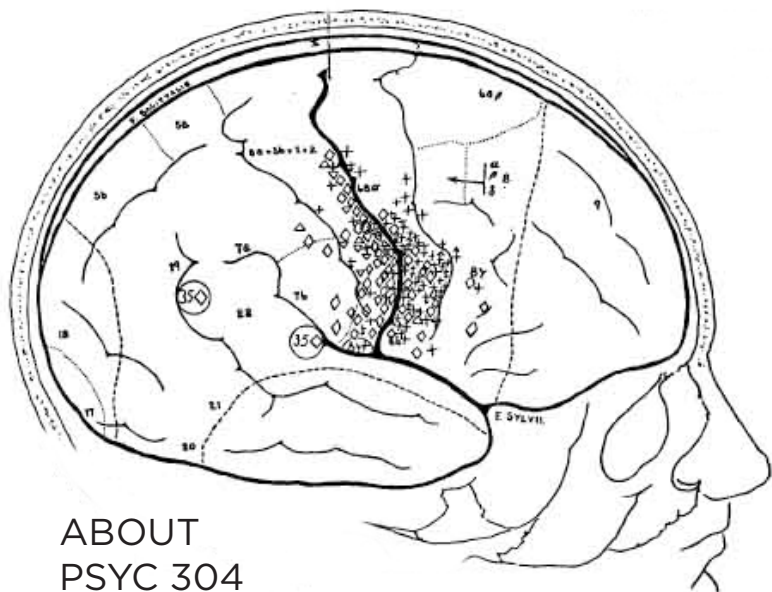


# PSYCHOLOGY 304-901: BRAIN & BEHAVIOUR

2016-2017



## ABOUT PSYC 304

Psychology 304 is a comprehensive course that examines most of the larger topic areas in Biopsychology (aka Behavioural Neuroscience). This course places equal emphasis on (1) attaining the essential background knowledge necessary to effectively navigate and interpret the biopsychological literature, and (2) teaching you how to think critically and creatively about biopsychological issues. Yet, the content of Psyc 304 is not merely academic: Much of what you will learn in this class can be readily applied in your every day life.

## LEARNING GOALS

By the end of this course you should be able to

- understand and use the language of biopsychology and neuroscience.
- understand and situate particular biopsychological phenomena within a historical context.
- navigate the biopsychology and neuroscience literatures with some confidence.
- spot some common errors in thinking about biopsychological phenomena.
- apply biopsychological knowledge in your everyday life.

## WHO, WHEN, WHERE

**Instructor:** Steven Barnes  
Room 3104, Kenny  
sjb@psych.ubc.ca  
*Office Hours:* Wed 12-1 (Kenny 3104), Wed 7:30-8:30 (SWING 222), and by appointment

**TA:** Aarthi Gobinath  
Office: Kenny 3514  
agobinath@psych.ubc.ca  
*Office Hours:* by appointment

**Schedule:** Wed, 5 - 7:30  
SWING 222

**Websites:** [psyc304.metaplasticity.com](http://psyc304.metaplasticity.com)  
The course website includes the following: Lecture schedule, slides, course syllabus, and a collection of course-related links. Please check for updated information about required readings, schedule changes, etc.

[elearning.ubc.ca/connect](http://elearning.ubc.ca/connect)  
We will be using Connect for the posting of grades and to access the Piazza discussion forums.

Notes: (1) Office hours might change; please check the course website for updates; (2) In most cases, emails will be answered within 48 hours on weekdays (not on weekends) during normal working hours; (3) When you send us an email, the subject line should include the course number and the nature of the inquiry (i.e., "PSYC 304 – Question about the limbic system"); (4) Before sending us an email that is content related, check the Piazza forums (see below) for similar questions and any associated answers; (5) If you do send us an email that is content related, it should contain no more than one question and you should try to explain your current understanding of the content in the email (which will be affirmed or corrected by myself or Aarthi).

## PREREQUISITES

There are two prerequisites for this course:

1. You have completed either: (a) Psychology 100, (b) both of Psychology 101 and 102, (c) two of Psychology 207, 208, 217 or 218, or (d) Psychology 260.
2. You are in the second year or later of your undergraduate degree or you are in a graduate degree.

## EVALUATION

### 1. Exams (up to 100%):

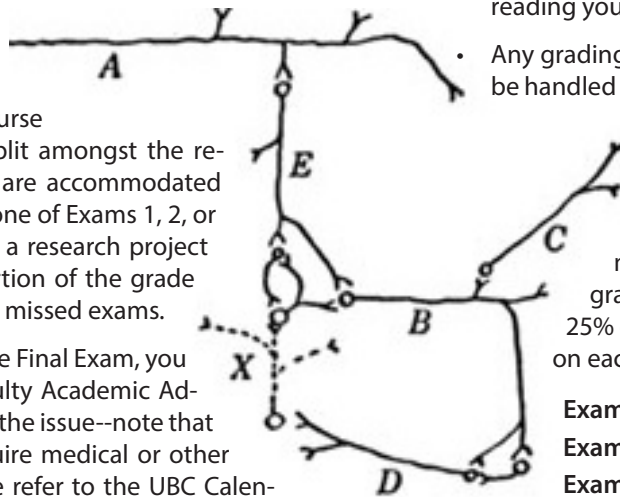
There will be five exams: 2 will be written during the exam periods at a time designated by the Registrar's Office (you must be available to write at any time during the exam periods), and 3 will be written during class time.

**Exam 1 (15%)**  
**Exam 2 (17.5%)**  
**Exam 3 (20%)**  
**Exam 4 (22.5%)**  
**Final Exam (25%)**

**Oct 5 (class time)**  
**Nov 9 (class time)**  
**Dec 6-21**  
**Feb 8 (class time)**  
**Apr 10-28**

## Notes on the Exams:

- Exams are not cumulative.
- There will be no makeup exams (except under certain circumstances when Exam 3 or the Final Exam is missed--see below).
- You will not be accommodated for missing Exams 1, 2, or 4 unless you present evidence of some unavoidable hardship to me within 48 hours of missing the exam.
- Being accommodated for missing any of Exams 1, 2, or 4 is at my sole discretion.
- If you are accommodated for missing one of Exams 1, 2, or 4, that portion of your course grade will be evenly split amongst the remaining exams. If you are accommodated for missing more than one of Exams 1, 2, or 4, you will be assigned a research project to make up for the portion of the grade corresponding to those missed exams.
- If you miss Exam 3 or the Final Exam, you must contact your Faculty Academic Advising Office to address the issue--note that they will probably require medical or other documentation. Please refer to the UBC Calendar for details of 'academic concession.' Please note that makeups for Exam 3 or the Final Exam will differ from the versions used for the rest of the class.
- You will not be allowed to write an exam if (1) you are more than 30 minutes late, or (2) another student has already submitted their exam--whichever occurs first.
- Note that, during exams, either myself or the invigilators reserve the right to move you to a new seat without providing an explanation.
- The dates of Exam 3 and the Final Exam are not announced by the University until mid-October and mid-February, respectively. You should not make any travel plans until you learn the dates of Exam 3 and the Final Exam.
- There will be topics covered in class that are not in the text and topics in the text that are not covered in class. You will be responsible for both. That is, all readings and all lecture materials are examinable.
- Exams will include multiple-choice, short-answer and essay questions.
- Note that the instruction on all multiple-choice questions will be to "select the single best response."
- If you encounter what you believe to be a faulty question on an exam, answer it to the best of your ability under the circumstances, and write a brief explanation of what you think is the problem on the front of your exam. Occasionally, bonus marks are awarded to those who spot ambiguities or errors.



## 2. Optional Project (up to 25%):

You may elect to do a project on a topic of your choosing that is related to the course materials. If you do elect to do a project, the grade you receive on that project will be worth 25% of your final grade, and the grades you receive on each of the exams will be worth the following:

- Exam 1: 10%
- Exam 2: 12.5%
- Exam 3: 15%
- Exam 4: 17.5%
- Final Exam: 20%

There are three purposes to this optional project:

1. To offer you the chance to explore a topic of your choice in greater depth than the lecture and text can offer.
2. To assess your ability to think both critically and creatively.
3. To offer you a chance to explore other ways of expressing your knowledge.

Although the standard format for this project is a review paper (described below), you are strongly encouraged to pursue other project formats. For example, in previous years, students have created short videos, paintings, computer models, musical compositions, dance sequences and stop-motion animations; and some have done community service learning as their project.

If you are ever unsure of whether the topic or format of your project is acceptable, please ask me.

If you choose any format other than the review paper (described below), you will need to clear your project topic and format with me. This can be done in person or by email on or before **Oct 19**. In most cases, I will provide you with a grading scheme customized to your specific project.

Your project should be one that is done for this course exclusively; handing in work done for another course (past or present) is not acceptable.

**Review Paper Option.** If you would like to write a review paper as your project (in American Psychological Association (APA) style; for examples of APA-style review articles, see the journals *Psychological Bulletin* and *Psychological Review*) you are encouraged, but not obligated, to contact me to check that the topic of your paper is suitable before you start writing. The content of your paper should not overlap substantially with the material in the text or lectures. The audience for your paper is a person who has already taken this course. Detailed grading criteria for the review paper are available on the course website.

You are expected to read a minimum of 10 peer-reviewed journal articles as part of your research, and your paper should not be less than 2500 words in length (excluding the title page, abstract, and references). When your chosen topic is one that is the subject of ongoing research, you are expected to use sources that are as up to date as possible.

**Project Due Dates and Grading.** Your grade for the optional project is comprised of two items:

<b>Preliminary Draft (10%)</b>	<b>Nov 23</b>
<b>Final Project (90%)</b>	<b>Mar 29</b>

**Preliminary Draft of Project.** If you choose the review paper option, then you must hand in the following on **Nov 23**: A title page, abstract, 1-2 page introduction, and a reference section. If you choose a project format other than the review paper, then I will provide you with information about what you need to hand in to me for this due date. The primary purpose of this hand-in is to allow me to give you some initial feedback on your topic and/or work. This preliminary draft of your project is worth 10% of your project grade.

**Final Version of Project.** The final version of your project is due **Mar 29** and is worth 90% of your project grade.

For both the preliminary draft and the final version of your project, you should hand in a paper copy and an electronic copy (.doc or .docx) to me. Regardless of when the electronic copy arrives, the time I get the paper copy shall be considered the official hand-in time.

### 3. Research Participation (up to 3% bonus):

You have the opportunity to earn up to 3 extra percentage points on your overall final grade by participating in studies regularly conducted by the Psychology Department and coordinated through the human subject pool (HSP). This provides you with the opportunity to observe the research process directly and to contribute to ongoing research activities at UBC. The extra credits are obtained by signing up for the subject pool at [ubc-psych.sona-systems.com](http://ubc-psych.sona-systems.com). If you plan to earn extra credit through research participation, please register in this online system by the end of the first month of classes.

You can find detailed information about research participation guidelines at [psych.ubc.ca/resguide.psy](http://psych.ubc.ca/resguide.psy). Please note that any inquiries about HSP credits should be directed to HSP and/or the experimenters that you worked with, not to me or Aarthi.

As an alternative to participating in studies, you may choose to

complete library writing projects, in which you read and summarize a research article; each article summary counts as one hour of research participation. More information about this option can be found at [psych.ubc.ca/resguide.psy](http://psych.ubc.ca/resguide.psy).

All of your credits for study participation or the library option will be added to your final course grade, after any scaling that may have been applied. One half of a percentage point is assigned to your final grade for each credit earned (because this is a 6-credit course). Credits can be recorded and tracked via the HSP website. If you do not correctly assign your credits to this course, you will not receive credit so please make sure you have done this correctly.

The last day to earn and assign HSP credits for each term is the final day of classes for each term (i.e., December 2, 2016 and April 6, 2017).

Please note that you can only earn up to 3 HSP credits during term 1 and up to 3 HSP credits during term 2.

## COURSE TEXT

**Required:** Pinel, J.P.J. (2013). *Biopsychology, 9th Edition*. Pearson, ISBN-13:978-0205915576 (hardcover); 978-0133770414 (looseleaf). This text was selected for this course because it was designed for a course very similar to the present one and because it was written by a UBC faculty member who was both a gifted biopsychologist and educator. From time to time, this text may be supplemented by other readings or videos to facilitate your understanding of the course materials. Please attend class and check the course website to obtain more information about these readings and videos.

**Optional:** Any additional learning aids associated with the textbook (e.g., Study Guide, "MyPsychLab" website, CD) are optional. Although they might be useful for enhancing your understanding and retention of the course materials, you will never be examined on any materials contained in these learning aids. If you decide to use MyPsychLab you will need this Course ID: *barnes44938*.

## COURSE SCHEDULE

Sep 7	Course Introduction and Overview
Sep 14	Introduction to Biopsychology (Ch 1)
Sep 21	Evolution, Genetics, & Experience (Ch 2)
Sep 28	Neuroanatomy (Ch 3)
Oct 5	<b>Exam 1</b>
Oct 12	Neural Conduction & Transmission (Ch 4)
Oct 19	Research Methods of Biopsychology (Ch 5); <b>Proposal for Optional Project Due</b> (if other than a review paper)
Oct 26	Visual System (Ch 6)
Nov 2	Visual System (Ch 6)
Nov 9	<b>Exam 2</b>



Nov 16	Perception & Conscious Awareness (Ch 7)
Nov 23	Sensorimotor System (Ch 8); <b>Preliminary Draft of Optional Project Due</b>
Nov 30	Neurodevelopment (Ch 9)
Dec 6-21	<b>Exam 3</b>
<b>December Break</b>	
Jan 4, 11	Brain Dysfunction & Neuroplasticity (Ch 10)
Jan 18	Learning, Memory, & Amnesia (Ch 11)
Jan 25	Hunger, Eating, & Health (Ch 12)
Feb 1	Hormones & Sex (Ch 13)
Feb 8	<b>Exam 4</b>
Feb 15	Sleep, Dreaming, & Circadian Rhythms (Ch 14)
<b>Midterm Break</b>	
Mar 1, 8	Drug Addiction & Brain Reward Systems (Ch 15)
Mar 15	Emotion, Stress & Illness (Ch 17)
Mar 22	Psychiatric Disorders (Ch 18)
Mar 29	Psychiatric Disorders (Ch 18); <b>Final Version of Optional Project Due</b>
Apr 5	Psychiatric Disorders (Ch 18)
Apr 10-28	<b>Final Exam</b>

A+	90-100%	A	85-89%
A-	80-84%	B+	76-79%
B	72-75%	B-	68-71%
C+	64-67%	C	60-63%
C-	55-59%	D	50-54%
F	0-49%		

Because you are earning a degree at a highly reputable post-secondary institution, the criteria for success are high. The Faculty of Arts offers the following guidelines that broadly characterize the kind of work that is generally associated with the particular grade ranges. These characteristics help put the Psychology Department grading policies into perspective. Please note that adequate performance is in the C range.

**A Range:** Exceptional Performance. Strong evidence of original thinking; good organization in written work; capacity to analyze (i.e., break ideas down) and to synthesize (i.e., bring different ideas together in a coherent way); superior grasp of subject matter with sound critical evaluations; evidence of extensive knowledge base.

**B Range:** Competent Performance. Evidence of grasp of subject matter; some evidence of critical capacity and analytic ability; reasonable understanding of relevant issues; evidence of familiarity with the literature.

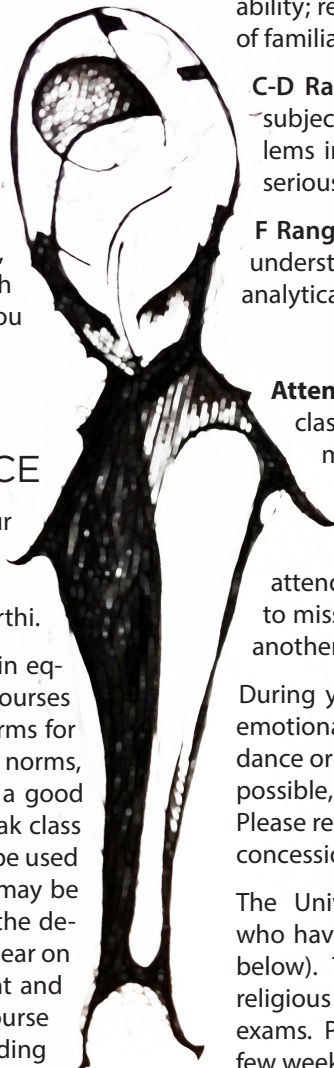
**C-D Range:** Adequate Performance. Understanding of the subject matter; ability to develop solutions to simple problems in the material; acceptable but uninspired work; not seriously faulty but lacking style and vigor.

**F Range:** Inadequate Performance. Little or no evidence of understanding of the subject matter; weakness in critical and analytical skills; limited or irrelevant use of the literature.

**Attendance.** In this course, material that is taught in class may be different from or supplement the text material. Moreover, lecture slides are designed to provide a framework for the lecture and any discussions--thus, not everything in the lecture is in the slides. It is, therefore, essential that you both attend class and read ahead in the text. If you do have to miss a class, you are responsible for getting notes from another student.

During your time in this course, if you encounter medical, emotional, or other personal problems that affect your attendance or academic performance, please notify me as soon as possible, as well as your Faculty Academic Advising Office. Please refer to the UBC Calendar for a discussion of academic concession.

The University accommodates students with disabilities who have registered with the Access & Diversity office (see below). The University also accommodates students whose religious obligations conflict with attendance or scheduled exams. Please let me know in advance, preferably in the first few weeks of class, if you will require any accommodation on these grounds. Other absences (e.g., varsity athletics, family



## WITHDRAWAL DATES

If you wish to withdraw from this course without any record of the course on your transcript, you must do so on or before **Sep 23**. If you wish to withdraw with a "W" on your transcript, you must do so on or before **Nov 25**.

## GRADING AND ATTENDANCE

**Grading.** Your grade for each exam (and your project components, if applicable) will be posted on Connect. If you wish to inspect your exam, you may do so by meeting with Aarthi.

In order to reduce grade inflation and maintain equity across course sections, all psychology courses are required to comply with departmental norms for grade distributions. According to departmental norms, the mean grade in a 300-level class is 70 for a good class, 68 for an average class, and 66 for a weak class (with a standard deviation of 13). Scaling may be used in order to comply with these norms; grades may be scaled up or down as necessary by myself or the department. Grades are not official until they appear on your transcript. You will receive both a percent and a letter grade for this course. At UBC, your course percentage is converted to a letter grade according to the following key:

obligations or similar) are not part of University policy and you should not assume they will be accommodated. Please discuss this with me before the withdrawal dates (see above).

**Access & Diversity.** UBC is committed to equal opportunity in education for all students including those with documented physical or learning disabilities. If you believe you fall in this category, please visit the website for Access & Diversity ([students.ubc.ca/about/access](http://students.ubc.ca/about/access)) to take the necessary steps to ensure that you have every opportunity that you deserve to excel in your studies.

**Early Alert Program.** I participate in the Early Alert program, which helps me support students who are facing difficulties that are interfering with their education, their wellness or both. For answers to frequently asked questions regarding the early alert program, please visit [blog.students.ubc.ca/earlyalert/information-for-students/students-frequently-asked-questions/](http://blog.students.ubc.ca/earlyalert/information-for-students/students-frequently-asked-questions/).

**Credit/D/Fail Grading.** This course is eligible for Credit/D/Fail grading. The last day to change between Credit/D/Fail and percentage grading is **Sep 23**.

## OTHER COURSE POLICIES

**Office Hours.** You should consider visiting Aarthi's office hour if you would like to review one of your exams (note: only Aarthi will have your exams). In addition to her regularly scheduled office hours, Aarthi will offer additional time windows for the review of exams. If you would like to review your exam, you must plan to attend one of these sessions or Aarthi's office hour. When reviewing your exam, you are not allowed to take notes on, or photos of, the exam. You should also connect with Aarthi if you would like to discuss textbook content (not lecture content) and/or study strategies, or you would like to discuss psychology and neuroscience more generally.

You should consider visiting my office hour if you would like to discuss lecture content (or psychology and neuroscience more generally) or if you have an issue with course performance or progress (e.g., you would like to discuss your exam performance after meeting with Aarthi or you missed an exam due to illness or some other adverse situation).

**Piazza Discussion Boards (via Connect).** We will be using Piazza for class discussion. The system is highly catered to getting you help fast and efficiently from classmates, Aarthi, and myself. Rather than emailing questions to myself or Aarthi, I encourage you to post your questions on Piazza. You can access our class page on Piazza either through Connect or by going to [piazza.com/ubc.ca/winterterm12016/sisubcpsyc3049012016w1279826/home](http://piazza.com/ubc.ca/winterterm12016/sisubcpsyc3049012016w1279826/home). Please note that any negative

or abusive remarks on any of the discussion forums will not be tolerated and failure to respect this policy may result in your access to Piazza being revoked.

**Classroom Conduct.** Our classroom is a place where you should feel safe and respected. It should also be a place that is conducive to learning and intellectual inquiry. Any behaviour on your part that compromises that environment will not be tolerated and you will be asked to leave.

## POINTS TO REMEMBER

- There are 21 classes and 16 chapters will be covered during the course. This means there will usually only be 1 lecture per chapter--plan your reading and studying accordingly.
- Productive classroom discussion and debate are encouraged.
- Lectures will typically focus on particularly important and/or interesting ideas. You are responsible for all text and lecture materials.
- Lecture slides will be available on the course website. However, if you miss a lecture, don't expect to find all of what you missed in the slides.
- Lecture slides will be posted on the course website the night before each lecture. This is done as a courtesy. Please be aware that I may make significant changes to the slides between that time and the lecture the next day. Final versions of lecture slides will be posted no later than the Friday following a lecture, and will be marked as 'Final Version'.
- Please be aware that the first quarter of the course can be especially challenging to those without some background in biology.
- It is worth devoting extra time to the materials in chapters 1-5 of the Pinel text, as they are foundational to the rest of the course.
- Laptops and similar devices can be effective learning tools and are welcome in class. However, if you are using them for non-class-related activities it can be distracting for others. So, if you plan to use devices for any non-class-related activities, please sit towards the back of the room.

## ACADEMIC MISCONDUCT

Cheating, plagiarism, and other forms of academic misconduct are very serious concerns of the University, and the Department of Psychology has taken steps to alleviate them. For example, the Department has implemented software that can reliably detect cheating on multiple-choice exams by analyzing the patterns of students' responses.

In all cases of suspected academic misconduct, the parties involved will be pursued to the fullest extent dictated by the guidelines of the University. Strong evidence of cheating or plagiarism may result in a zero credit for the work in question. According to the University Act (section 61), the President of UBC has the right to impose harsher penalties including (but

not limited to) a failing grade for the course, suspension from the University, cancellation of scholarships, or a notation added to the student's transcript.

All graded work in this course, unless otherwise specified, is to be original work done independently by individuals. If you have any questions as to whether or not what you are doing is even a borderline case of academic misconduct, please consult with me. For details on pertinent University policies and procedures, please see Chapter 5 in the UBC Calendar ([students.ubc.ca/calendar](http://students.ubc.ca/calendar)) and read the University's Policy 69 (available at [university-counsel.ubc.ca/policies/policy69.html](http://university-counsel.ubc.ca/policies/policy69.html)).

## WELLNESS RESOURCES

Below you will find a list of resources you may want to utilize if you are struggling in any way to manage your responsibilities while in school or the stresses of life in general.

### **The Kaleidoscope:**

[the-kaleidoscope.com](http://the-kaleidoscope.com)

A confidential peer-run mental health support group that takes place on campus at least once a week. You may attend the group if you are experiencing any kind of mental health related challenges, or if you're just feeling stressed about school in general. Registration is not required to attend the group. See the website for meeting times and locations. Food and drink are provided.

### **Counselling Services:**

[students.ubc.ca/livewell/services/counselling-services](http://students.ubc.ca/livewell/services/counselling-services)

Phone number: 604-822-3811

Counselling services offers a variety of resources to help you maintain your mental health while in school. You may see a counsellor on an individual basis, attend group counselling, or to document an illness if you should require academic concession.

### **SpeakEasy:**

[ams.ubc.ca/services/speakeasy/](http://ams.ubc.ca/services/speakeasy/)

Phone number: 604-822-9246

A student run service that offers confidential support for students experiencing crisis. Also a good resource for additional information and referrals within the UBC community.

### **SHARE:**

[www.vivreshare.org](http://www.vivreshare.org)

Self Harm Anonymous Recovery and Education is a program designed to promote self care and educate about self harm. SHARE support groups meet biweekly; times and locations can be found on their website.

### **UBC Wellness Centre:**

[students.ubc.ca/livewell/services/wellness-centre](http://students.ubc.ca/livewell/services/wellness-centre)

Phone number: 604-822-8450

Speak with other students about tips for managing stress, keeping healthy sleep and eating patterns, concerns about safe sex and more.

### **Access and Diversity:**

[students.ubc.ca/about/access](http://students.ubc.ca/about/access)

604-822-5844

Access and Diversity provides accommodations for students living with physical or mental disabilities.

### **Student Health Services:**

[students.ubc.ca/livewell/services/student-health-service](http://students.ubc.ca/livewell/services/student-health-service)

604- 822-7011

Student health provides students with a variety of healthcare related services to help you maintain your health while studying. Access to doctors and registered nurses.

### **Mood Disorders Clinic UBC:**

[ubc-mooddisorders.vch.ca/](http://ubc-mooddisorders.vch.ca/)

A psychiatric program designed specifically to treat individuals living with depression or bipolar disorder.

### **Live Well, Learn Well:**

[students.ubc.ca/livewelllearnwell](http://students.ubc.ca/livewelllearnwell)

The Live Well, Learn Well initiative is a resource hub that provides students with information to help improve physical and mental wellbeing.

### **Mental Health Awareness Club:**

[ubcmhac.sites.olt.ubc.ca/](http://ubcmhac.sites.olt.ubc.ca/)

A club that offers opportunities to speak about mental health with others and strives to promote mental health awareness throughout the UBC community.

### **Pacific Spirit Addiction Services:**

3rd Floor, 2110 West 43rd Ave Vancouver B.C. V6M 2E1

Phone number: 604-267-3970

A free and confidential service for youth and young adults up to the age of 24. Services include counselling, access to an addiction physician - including usage of a methadone maintenance program - and a drug education series.

### **AMS Food Bank:**

[ams.ubc.ca/services/food-bank/](http://ams.ubc.ca/services/food-bank/)

If you are in a financial emergency AMS food bank can provide you with a food hamper. You are able to use the service up to 6 times each term.

### **UBC Psychology Clinic:**

[clinic.psych.ubc.ca](http://clinic.psych.ubc.ca)

Professional psychological services provided to the community, including assessment & treatment for children, adults & families by clinical psychology trainees.

**BC Crisis Center:**

*crisiscentre.bc.ca*

Phone number: 604-872-3311

Non-profit, volunteer-driven organization that provides emotional support to youth, adults, and seniors in crisis in BC. Crisis line available 24/7.

**Distress Line:**

Phone number: 1-800-Suicide (784-2433)

If you are in distress or are worried about someone in distress who may hurt themselves, call 1-800-SUICIDE 24 hours a day to connect to a BC crisis line, without a wait or busy signal.

*Last Modified: September 6, 2016*