

## Available TAs through the Department of Microbiology and Immunology

Students pursuing a graduate program in the Department of Microbiology and Immunology are expected to complete a full Teaching Assistantship (192 hours) to meet degree requirements. When assigning a TAs hip, preference is given to students in the Department of Microbiology and Immunology and TAs with hiring priority.

Please review the available TAs hips below and then use this form to apply:

[https://ubc.ca1.qualtrics.com/jfe/form/SV\\_3KUtVxTZSDa8zS6](https://ubc.ca1.qualtrics.com/jfe/form/SV_3KUtVxTZSDa8zS6)

**BIOL V 112 Biology of the Cell** - *The principles of cellular and molecular biology using mainly bacterial examples; Aspects of cellular evolution and the impact of cellular processes on the environment.*

**Qualifications:** Teaching assistant should be confident in explaining concepts both orally and in written text (email and online); Enthusiastic about teaching first year students.

**Required:** Ta's must attend lectures and read lecture notes; run learning centre, answering questions weekly; additional tutorials offered in group blocks throughout the term e.g. study sessions, creating multiple choice questions etc. where students will have options to attend. TA's will lead and facilitate these sessions. Monitor bulletin board on VISTA. Hold review sessions to address questions before exams.

**Opportunity to give Lecture:** No

**Marking responsibilities:** Marking in class activities; 2 midterm exams and 2 final exams made up of short answer, essay and multiple choice

**Number of Hours/week:** 12

**Number of available positions:** 2-3/yr (max 1 per term)

**Course: MICB\_V 203 + MICB\_V 353 Food Microbiology Laboratory** - *Procedures and principles associated with isolation, enumeration, characterization and handling of microorganisms.*

**Qualifications:** Attention to detail, must keep detailed notes, good oral and written skills. Interact and mentor students as they adjust to lab setting

**Required:** to attend classes a few times/term. Read lab manual and relevant course material. Be present for the entire lab session. Set up and clean up lab. Prepare material for lab exercises and advise student on preparation of lab report; office hours via email.

**Opportunity to give Lecture:** No

**Marking responsibilities:** Mark weekly lab reports/quizzes and enter grades. Invigilate final exam.

**Number of Hours/week:** 6

**Number of available positions:** 1 (Term 2)

**Course: MICB\_V 205: Fundamental Data Science in Microbiology and Immunology-** Foundations in data science course that incorporated the use of Biological data science tools to perform survey-level analysis of microbiology and immunology datasets

**Qualifications:** this is an opportunity to work with second year students using tools and datasets that will prepare students for further opportunities in data management. The TA is expected to be comfortable explaining concepts both orally and in written text (email and online).

**Opportunity to give Lecture:** No

**Marking responsibilities:** Marking in class activities; 2 midterm exams and 2 final exams made up of short answer, essay and multiple choice

**Number of Hours/week:** 6

**Number of available positions:** 2 (term 1 and 2)

**Course: MICB\_V 211 Foundations of Microbiology-** Prokaryotic diversity and the impact and applications of microbial metabolic, genetic, and growth processes in environmental contexts. Bacteria-human interactions in health and disease, mode of action of antibiotics and antibiotic resistance, virulence factors of bacteria, and host response to infection

**Qualifications:** This course is an exciting, entry-level introduction to Microbiology. It is a broad, basic course with approx. 250 students in the class. The TA is not expected to be an expert in every area of the course, but should be willing to learn and be confident explaining concepts both orally and in written text (email and online).

**Required:** Ta's must attend lectures and read lecture notes; TA will be asked to present six one hour Q&A sessions. Office hours by appointment in small groups, answer emails, before and

after class and before exams. Monitor discussion board on Connect. Conduct exam review sessions. Invigilate 3 exams.

**Opportunity to give Lecture:** yes –strictly on a volunteer basis- if student is interested.

**Number of Hours/week:** 6 and 12 hours may be available

**Number of available positions: 1 per section (term 1 and term 2 (2 sections))**

**MICB V 212 Introductory Medical Microbiology and Immunology-** *Introduction to cellular and humoral immune responses, the properties of viruses and the principles of bacterial pathogenesis.*

**Qualifications:** This course is an exciting, entry-level introduction to Microbiology & Immunology. It is a broad, basic course with approx. 300 students in the class. The TA is not expected to be an expert in every area of the course, but should be willing to learn and be confident explaining concepts both orally and in written text (email and online).

**Required:** Ta's must attend lectures and read lecture notes; TA will be asked to present six one hour Q&A sessions. Office hours by appointment in small groups, answer emails, before and after class and before exams. Monitor discussion board on Connect. Conduct exam review sessions. Invigilate 3 exams. **Opportunity to give Lecture:** yes –strictly on a volunteer basis- if student is interested.

**Number of Hours/week:** 6

**Number of available positions: 2-3/yr (max 1 per term)**

**MICB V 301 Microbial Ecophysiology -** *Dynamics and control of prokaryotic cellular processes in response to the biotic and abiotic environment including metabolic interactions and metabolic cooperation between microorganisms.*

**Qualifications:** training in general microbiology and microbial ecology; computer and bioinformatics skills, specifically ability to analyze microbial communities via amplicon sequencing.

**Required:** to attend lectures 3 hours/week participate when called upon, manage some facets of the BlackBoard Connect experience for students, including making announcements, managing grades, and other content. Detailed grading rubrics will be provided for both exams, as well as for grading the assignments.

Opportunity to give Lecture: Yes

**Marking responsibilities:** T.A. will be grading smaller assignments throughout the semester plus one final computer based project.

Number of Hours/week: 12

**Number of available positions: 1 (Term 1)**

**MICB V 302 Immunology** - *Cells, molecules, and mechanisms of innate and adaptive immunity.*

*Antigen presenting cells and the major histocompatibility complex, T and B lymphocytes and their antigen receptors, T and B cell development, innate and adaptive immune responses against pathogens, diseases associated with aberrant immune responses.*

**Qualifications:** Teaching Assistance should have a strong background in Immunology.

**Required:** to attend lectures 3 hours/week and read course material; answer and review lecture content; prepare or modify their own PowerPoint slides; 10 weeks of tutorials – 2 one hour sessions per week; answer student questions on VISTA; post tutorial materials; exam review sessions.

**Opportunity to give Lecture:** Students will not be asked to give lectures

**Marking responsibilities:** TAs will be required to grade the midterm and two final exams. The exam format will be short answer or short essay; answer keys and point values provided.

Number of Hours/week: 12

**Number of available positions: 2 (Term 1)**

**Course: MICB\_V 305 Data Science in Microbiology and Immunology**

**Qualifications:** Teaching Assistance should have a background in bioinformatics; be excited about research and comfortable explaining difficult molecular topics;

**Required:** to attend lectures 3 hours/week and read course material; answer and review lecture content; prepare or modify their own PowerPoint slides; 10 weeks of tutorials – 2 one hour sessions per week; answer student questions on VISTA; post tutorial materials; exam review sessions.

**Opportunity to give Lecture:** Students will not be asked to give lectures

**Marking responsibilities:** TAs will be required to grade the midterm and two final exams. The exam format will be short answer or short essay; answer keys and point values provided.

Number of Hours/week: 6-12

**Number of available positions: 2 (Term 1 and term 2)**

**MICB V 306 Molecular Virology** -*Introduction to virus structure and replication; detailed examination of selected viruses including polio, HIV and cancer- causing retroviruses; development of vaccines and anti-viral drugs, the use of virus vectors to cure genetic diseases.*

**Qualifications:** Strong virology background, good grasp of virology concepts and be confident explaining difficult concepts both orally and in written text (email and online).

**Required:** New Ta's must attend lectures and read lecture notes

Attend 2 -1 hour tutorial/week (lead discussion, to review difficult points, go over review questions) Office hours by appointment in small groups, answer emails from students before and after class

**Opportunity to give Lecture:** yes –strictly on a volunteer basis- if student is interested

**Marking responsibilities:** 2 midterm exams, final exam, short answer, essay and multiple choice. (Answer key with point assignments given). 4 pop quizzes. Invigilate 4 exams. Enter grades.

Number of Hours/week: 12

**Number of available positions: 2 (term 1)**

**MICB V 308 Paradigms in Bacterial Pathogenesis** - *Mechanisms of bacterial pathogenesis including adherence, invasion, intracellular survival, toxins, host defenses and microbial evasion strategies, antibiotics, and vaccines. Introduction to experimental approaches used to study bacterial pathogens.*

**Qualifications:** strong background in microbiology and specifically pathogenesis. Be patient working with students with excellent attention to detail.

**Required:** Attendance in lectures; monitoring of the WebCT bulletin board daily ask students to come up with answers and provide answers if the students need assistance; 1-2 tutorials prior to midterm and final exam; read lecture notes and textbook assignments; read lab manual

Opportunity to give Lecture: No

**Marking responsibilities:** Mark all essays for midterm and final exam; invigilate midterm and 2 final exams, student will be given an answer key with point values assigned; marking can be time consuming.

**Number of Hours/week: 12**

Number of available positions: 1 (Term 2)

**MICB V 353 + MICB V 203 Food Microbiology Laboratory** - *Procedures and principles associated with isolation, enumeration, characterization and handling of microorganisms.*

**Qualifications:** Attention to detail, must keep detailed notes, good oral and written skills. Interact and mentor students as they adjust to lab setting

**Required:** to attend classes a few times/term. Read lab manual and relevant course material. Be present for the entire lab session. Set up and clean up lab. Prepare material for lab exercises and advise student on preparation of lab report; office hours via email.

Opportunity to give Lecture: No

**Marking responsibilities:** Mark weekly lab reports/quizzes and enter grades. Invigilate final exam.

Number of Hours/week: 6

**Number of available positions:** 1 (Term 1)

**MICB V 322 Molecular Microbiology Laboratory** - *Aseptic handling and characterization of microbes, growth properties, enzyme assays, protein analysis and plasmid isolation.*

**Qualifications:** Attention to detail, must keep detailed notes, good oral and written skills.

**Required:** Be present for the entire lab session. Set up and clean up lab at start and end of term. Prepare material for lab exercises and advise student on preparation of lab report; evaluate student's preparedness and ability to work independently; office hours on lab days.

**Opportunity to give Lecture:** TA can give lab demos if interested

**Marking responsibilities:** Midterm, Final exam with occasional quiz, marking guides provided. Mark Lab reports, final papers and record grades; Invigilate exams.

Number of Hours/week: 12

**Number of available positions:** 2-3 per Term (max 3 terms)

**MICB V 323 Molecular Immunology and Virology Laboratory-** *Genetic manipulations of bacteria, introductory immunological and virological procedures, tissue culture. Restricted to students in Microbiology and Immunology specializations*

Qualifications:

**Required:** Be present during entire lab session; set up before and clean up afterward lab; read lab manual; be prepared to answer students' questions during lab sessions

Opportunity to give Lecture: No

**Marking responsibilities:** Lab report grading required with detailed marking key. Assign grade for report

Number of Hours/week: 12

**Number of available positions: 2-3 per Term (max 2 terms)**

**MICB\_V 325 Analysis of Microbial Genes and Genomes** - *Genetic, molecular biological and bioinformatic approaches for the analysis of microbial genomes, gene structure-function and gene expression with emphasis on bacteria*

Qualifications:

**Required:** Attend lectures, read lecture notes and textbook assignments; student runs tutorials, leads discussions, reviews and answers questions; have office hours and answer student's questions; monitor WebCT bulletin board and answer unanswered questions

Opportunity to give Lecture: no

**Marking responsibilities:** grade midterm and final exam; answer key with assigned point values will be provided; considerable marking done by TA after midterm and large amount after final exam. There will be lecture notes, suggested answers to problems, and interaction with the instructor outside of class to discuss the problems that will be assigned to students.

Number of Hours/week: 12

**Number of available positions: 1-2 (Term 2)**

**BIOL\_V 346 Microbes and Society** - *An elementary course in molecular biology primarily for Arts students; the historical development of recent discoveries in molecular biology with emphasis on bacteria and viruses and their interaction with humans. (Not for credit in Life Sciences.)*

**Qualifications:** Quick learner; flexible with responsibilities, ability to explain complex concepts to students will limited background science knowledge.

**Required:** attend lectures; answer questions, respond to student's emails; monitor WebCT bulletin board; short review session in class.

Opportunity to give Lecture: Yes.

**Marking responsibilities:** marking included midterm and final exam, short answer, multiple choice;

Number of Hours/week: 6

**Number of available positions: 1 (Term 2)**

**MICB\_V 402 Advanced Immunology** - *Molecular basis of lymphocyte development, activation and adhesion; immunogenetics and the major histocompatibility complex*

**Qualifications:** Teaching Assistant needs strong Immunology back ground with preference given to student who has taken 402 or equivalent.

**Required:** read and explain the content of the lectures and manuscripts covered in the course. Deliver two tutorials/week; review material covered in lectures of the preceding week; create overhead and/or PowerPoint slides; weekly office hours; review sessions before final exams.

**Opportunity to give Lecture:** yes –strictly on a volunteer basis- if student is interested. Content would be provided.

**Marking responsibilities:** Invigilate midterm and 2 final exams

Number of Hours/week: 6

**Number of available positions:** 1 (Term 1)

**MICB\_V 405 Bioinformatics**- *Computational methods to analyze genome and protein sequences to derive structural and functional information; related topics in functional genomics.*

**Qualifications:** TA will troubleshoot student problems with BaseSpace during tutorials. Access to a laptop (or PC) connected to the internet will be needed for the tutorial sessions. A tentative schedule of software packages to review during tutorials is included in the lecture schedule.

**Required:** to attend lectures 3 hours/week; twelve one hour tutorials performed twice; review lectures and course material; support and advice on the research projects; demonstrate and troubleshoot analysis problems through BaseSpace; field additional questions via email.

**Opportunity to give Lecture:** yes –strictly on a volunteer basis- if student is interested. Content would be provided.

**Marking responsibilities:** Midterm and final is short answer format and TA will record grades. Answer key will be provided and TA will mark a subset of questions.

Number of Hours/week: 12

**Number of available positions:** 1-2 (Term 1)

**MICB\_V 407 (3) Viral Infections in Humans.**

Interactions between viruses and humans; pathogenesis; persistence and viral oncogenesis; virological diagnosis and treatment.

**Qualifications:** strong background in microbiology and specifically viruses. Be patient working with students with excellent attention to detail.

**Required:** Attendance in lectures; monitoring of the WebCT bulletin board daily ask students to come up with answers and provide answers if the students need assistance; 1-2 tutorials prior to midterm and final exam; read lecture notes and textbook assignments.

Opportunity to give Lecture: No

**Marking responsibilities:** Mark all essays for midterm and final exam; invigilate midterm and 2 final exams, student will be given an answer key with point values assigned; marking can be time consuming.

Number of Hours/week: 6

**Number of available positions:** 1 (Term 1)

**MICB\_V 408 (3) Advanced Bacterial Pathogenesis** - *Current and emerging themes in bacterial pathogenesis including cellular microbiology, bacterial cell biology processes and their role in virulence including secretion systems to deliver virulence factors and immune evasion strategies employed by pathogens. Development of antibiotics and resistance to antibiotics.*

**Qualifications:** strong background in microbiology and specifically pathogenesis.

**Required:** Attendance in lectures; monitoring of the WebCT bulletin board daily ask students to come up with answers and provide answers if the students need assistance; 1-2 tutorials prior to midterm and final exam; read lecture notes and textbook assignments.

Opportunity to give Lecture: No

**Marking responsibilities:** Mark all essays for midterm and final exam; invigilate midterm and 2 final exams, student will be given an answer key with point values assigned; marking can be time consuming.

Number of Hours/week: 6

**Number of available positions:** 1 (Term 1)

**MICB\_V 425 (3) Microbial Ecological Genomics** - *Intrinsic and extrinsic forces driving prokaryotic genome evolution. Gene transfer; microbial species concepts; community genome structure, function and dynamics; ecological impacts of microbial genome diversity. Emphasis on problem solving and experimental design*

Qualifications:

**Required:** Attend lectures, read lecture notes and textbook assignments; student runs tutorials, leads discussions, reviews and answers questions; have office hours and answer student's questions; monitor WebCT bulletin board and answer unanswered questions

Opportunity to give Lecture: no

**Marking responsibilities:** grade midterm and final exam; answer key with assigned point values will be provided; considerable marking done by TA after midterm and large amount after final exam. There will be lecture notes, suggested answers to problems, and interaction with the instructor outside of class to discuss the problems that will be assigned to students.

Number of Hours/week: 6

**Number of available positions: 1 (Term 2)**

**MICB\_V 418 Industrial Microbiology and Biotechnology** - *Exploitation of microbial and animal cells for the industrial production of chemicals ranging from alcohol to therapeutic proteins; genetic manipulation of cellular characteristics, fermentation methods, patenting and governmental approval processes.*

Qualifications:

**Required:** Attend lectures; Read lecture notes provided by the instructor, textbook and other handout materials; run 2 one hour tutorials/week. Give occasional overview presentation to clarify difficult topics; deliver review questions; answer student's questions by appointment or in groups or via email; post tutorial presentations and address discuss points with students on the WebCT bulletin board **Opportunity to give Lecture:** yes –strictly on a volunteer basis- if student is interested.

**Marking responsibilities:** marking is on a voluntary basis only if TA wishes to gain experience. Invgilate 2 midterms and final exam

Number of Hours/week: 6

**Number of available positions: 1 (Term 2)**

**MICB V 471 Experimental Molecular Biology**- *A laboratory course with a choice of independent, supervised research projects. Students develop protocols to carry out investigation of selected molecular biology problems.*

**Qualifications:** Teaching Assistant needs to be excited about research, problem solver, good communicator. Attention to detail, must keep detailed notes, good oral and written skills.

**Required:** to attend lectures read course material and be present during entire lab session; meet with instructor weekly; support students by answering their questions and help solve problems; lead discussions and facilitate student projects by critiquing proposals, discussing methods, suggesting sources. Supervise lab, discards, maintenance of equipment areas and chemicals inventory. Report interesting or important observations or problems of student activities to the instructor so they can be discussed/addressed/brought up in class

**Opportunity to give Lecture:** Teaching assistants are given the opportunity to lead one lecture but it is not required.

**Marking responsibilities:** Advise students on preparation of lab reports by grading marking and talking with students. Download and read student proposals and reports from WebCT site. Two reports submitted/ term for marking; Grading rubric, discussion of expected analysis; of technical details; grading lab books; checking attendance and journals.

Number of Hours/week: 12

**Number of available positions: 3 per term (max 2 terms)**

**MICB V 475 Data Science Research in Microbiology and Immunology**- *Research using amplicon sequencing data. Guided and independent laboratory projects are developed.*

**Qualifications:** Strong background in Microbiology and Data Science, excited about research and comfortable explaining difficult molecular topics; troubleshooting and solving lab problems.

**Required:** Attend lectures; Read lab manual; attend weekly meetings after the lecture; support students in troubleshooting experimental problems; facilitate student project development by critiquing proposals, discussing methods and suggesting sources; present for entire lab session; advise students on preparation of lab reports by grading, and talking with students. Supervision of the lab, discards, maintenance of equipment areas and maintenance of chemicals is an ongoing activity; report interesting or important observations to the instructor.

**Opportunity to give Lecture:** Teaching Assistances are given the opportunity to lead one lecture. It is not required.

**Marking responsibilities:** download and read student proposals and reports; one mid-term exam- multiple choice, short answer and essay; students will be assessed while in the lab; grade submitted reports –grading rubric, discussion of expected analysis and discussion of technical details. Invigilate 1 mid-term and two final exams.

Number of Hours/week: 12

**Number of available positions: 3 per term (max 2 terms)**