Arthropod borne diseases such as malaria, yellow fever, dengue, west Nile virus, lime
disease, filariasis and many others continue to cause human suffering and death. Problems in
animal production, pets and wildlife caused by arthropods continue to cause financial losses.
In last two decades the invasion of exotic pests and pathogens has presented a new problem
in many countries including Canada and USA.

Medical Entomology covers direct injuries caused by arthropods such as phobias, annoyance,
allergies, toxins, venoms and myiasis, arthropod transmission of vertebrate parasites,
epidemiology of arthropod born diseases. Students study transmission of diseases, methods of
surveillance for diseases, management by vector control and other methods of prevention of
arthropod born diseases.

April 29
Lecture 3 hours:
Introduction to course
Arthropods
Classification
Morphology, anatomy, physiology, behavior, biology.
Life cycles, reproduction, development
Lab 4 hours:
Introduction to collections, diversity of Arthropods important for human and animal health.
Morphology, anatomy.
Video

April 30
Lecture 3 hours:
Historical Public health and vector-borne diseases, direct injury by arthropods
Introduction to the classes of vector borne pathogens, Arachnids, scorpions, spiders, etc. of
medical importance
Lab 4 hours:
Araneae. Arachnids, scorpions, spiders, etc. of medical importance, transmitted diseases, bite
reactions.
Video

May 1
Lecture 3 hours:
Host-parasite interactions, evolution of the blood feeding habit
Tick biology and behavior
Ticks and disease. Lyme disease, Alkhurma virus (KFDV), Kyasanur forest disease, Babesia,
Human ewingii ehrlichiosis, Human granulocytic ehrlichiosis, Scrub typhus
Emerging tick-borne infections.
Lab 4 hours:
Acarai. Ticks and disease
Video
May 2, Saturday

**Field trip to Tantallon**

May 4
Lecture 3 hours:
Mites and disease typhus, scabies, Demodex -hair follicle mites, face mites, Cats Mange.
Lyme disease
Lab 4 hours:
Acari. Mites and disease
Video

May 5
Lecture 3 hours:
Blattaria, cockroaches. Gastroenteritis, allergies, watery eyes, skin rashes, congestion of nasal passages and asthma.
Hemiptera. Bed bugs, kissing bugs and disease, Chagas disease, allergies, bite reaction.
Lab 4 hours:
**Quiz 1**
Hemiptera, disease and bite reaction.
Video

May 6
Lecture 3 hours:
Phthiraptera. Lice and disease. Typhus.
Lab 4 hours:
Phthiraptera, Siphonaptera, disease and bite reaction.
Video

May 7

**Field trip to Hope for the Wildlife Animal Shelter**

May 8
Lecture 3 hours:
Nematocerous Diptera (black flies, midges, sand flies, biting midges).
Leishmaniasis and Onchocerciasis.
Adult and larval mosquito ecology
Mosquitoes and malaria
Mosquitoes and arboviruses (Yellow fever and dengue)
Mosquitoes and arboviruses (West Nile and other arboviral infections)
Mosquitoes and filariasis
Lab 4 hours:
Diptera. Nematocera and disease.
Video

May 9, Saturday
Lecture 3 hours:
Diptera (Brachycera: Muscidae, horse flies, stable flies) of Veterinary Importance
Development of Research on Emerging Vector-borne infections
Mating biology of Diptera: implications for vector biology
Epidemiology and transmission cycles, Vector borne disease surveillance and control strategies.
Genetically modified mosquitoes, future challenges in public health
Myiasis - infection by parasitic fly larvae that feed on their host living/dead tissue.
Botflies, Sheep Ked,

Lab 4 hours:
Presentations
Diptera and disease
Video

May 11
**Field trip to Burnside, Eastern passage**

May 12
Collecting arthropods in South End Halifax and in Dalhousie area.
**Quiz 2**
Finalising lab reports, PowerPoint presentations.
Review of slides and collections

May 13
Finalising and submitting lab reports, PowerPoint presentations.
Review of slides and collections

May 14
Final lab exam

Laboratory exercises and field trips include collecting vectors in natural habitats, sorting and identifying of collected specimens of vectors to the species level. Students make presentation in the class on the library research or individual research on chosen topic.

There are two field trips to the forest, farm, for collecting arthropod vectors of diseases and learning methods of diagnosis and treatment of patients.

**Organization:**

The SEASIDE class is scheduled for eight three-hour **lectures**, eight four-hour **labs**, and two **field trips**

Lectures: Monday to Saturday from 9:05 to 11:55 in LSC-COMMON AREA C240

Labs: Monday to Saturday from 13:05 to 16:55 in LSC-BIOL& EARTH B2102

**Grading:**

Two quizzes (25% each, 50% total) and final lab exam (25%) will cover subjects from lectures, labs, and text reading. The final lab exam will be a comprehensive exam including all taxa from the beginning to the end of the course. The exam and quizzes include a wide variety of questions and problems, based on direct injuries caused by arthropods, arthropod transmission of vertebrate parasites, epidemiology of arthropod born diseases, transmission of
diseases, methods of surveillance for diseases, management by vector control and other methods of prevention of arthropod born diseases.

Do not miss the exam. Any make-up exam (by prior arrangement or in dire emergency) will consist of a two hour oral examination covering the same general areas of the written exam.

The remainder of the grade is based on the laboratory work (15%) and presentation in the class on the library research or individual research (10%). Topic must be approved to prevent possible difficulties. Guidelines on keeping a notebook will be given in lab.

**Important Dates:**

There are three field trips to the forest, farm, animal shelter for collecting arthropod vectors of diseases and learn methods of diagnosis and treatment of patients.

**Grading scale:** Conversion of numerical grades to final letter grades will follow the Dalhousie University Common Grade Scale: 

**BOOKS:**


**Academic Integrity**

At Dalhousie University, we respect the values of academic integrity: honesty, trust, fairness, responsibility and respect. As a student, adherence to the values of academic integrity and related policies is a requirement of being part of the academic community at Dalhousie University.

**What does academic integrity mean?** Academic integrity means being honest in the fulfilment of your academic responsibilities thus establishing mutual trust. Fairness is essential to the interactions of the academic community and is achieved through respect for the opinions and ideas of others. “Violations of intellectual honesty are offensive to the entire academic community, not just to the individual faculty member and students in whose class an offence occurs.” [University Calendar]

**How can you achieve academic integrity?**
- make sure you understand [Dalhousie’s policies on academic integrity](http://www.library.dal.ca/How/RefWorks)
- give appropriate credit to the sources used in your assignment such as written or oral work, computer codes/programs, artistic or architectural works, scientific projects, performances, web page designs, graphical representations, diagrams, videos, and images
  - Use RefWorks to keep track of your research and edit and format bibliographies in the citation style required by the instructor
- do not download the work of another from the Internet and submit it as your own
- do not submit work that has been completed through collaboration or previously submitted for another assignment without permission from your instructor
- do not write an examination or test for someone else
- do not falsify data or lab results
  
  [these examples should be considered only as a guide and not an exhaustive list]

**What will happen if an allegation of an academic offence is made against you?**

Your instructors are required to report a suspected offence. The full process is outlined in the [Discipline flow chart](http://www.library.dal.ca/How/RefWorks) and includes the following:

- Each Faculty has an Academic Integrity Officer (AIO) who receives allegations from instructors
- The AIO decides whether to proceed with the allegation; you will be notified of the process
- If the case proceeds, you will receive an INC (incomplete) grade until the matter is resolved
- If you are found guilty of an academic offence, a penalty will be assigned ranging from a warning to a suspension or expulsion from the University and can include a notation on your transcript, failure of the assignment or failure of the course. All penalties are academic in nature.

**Where can you turn for help?** If you are ever unsure about ANYTHING, contact your instructor.

- [Academic Integrity website](http://www.library.dal.ca/How/RefWorks) - Links to policies, definitions, online tutorials, tips on citing and paraphrasing
- [Writing Center](http://www.library.dal.ca/How/RefWorks) - Assistance with proofreading, writing styles, citations
- Workshops, online tutorials, citation guides, Assignment Calculator, RefWorks
- Dalhousie Student Advocacy Service - Assists students with academic appeals and student discipline procedures.
  - Senate Office - List of AIOs, discipline flow chart, Senate Discipline Committee