This syllabus is a general representation of the course as previously offered and is subject to change.

BIOL 203 – Eukaryotic Microbiology

General Course Syllabus (as of August 2019)

About the Course:

Course Description: An introduction to the origin and diversity of protists (protozoa and algae) at both cellular and genomic levels, including the role of endosymbiosis in evolution.

Course Format: Lecture and Lab
Credits: 4
Prerequisites: BIOL 140 and one of: BIOL 121 or SCIE 001.

Course Learning Objectives:

By the end of this course, students should be able to:

- Define basic terminology for structure, function, classification, and nomenclature in eukaryotic microbiology.
- Describe the origin of multicellularity and how it relates to the diversity and phylogenetic classification of protists.
- Explain how protist morphology relate to protist behaviours and adaptations to their environment.
- Explain protist photosynthesis in context of biofuel production and their role as primary producers in terrestrial ecology.
- Name common protist pathogens and their impact on humans.
- Build and use a simple microscope based on van Leeuwenhoek's design.
- Develop observational skills by viewing, measuring, and making accurate and clear recordings and biological drawings of organisms.
- Prepare protist samples for observation including making a wet mount, setting up Köhler illumination and phase contrast, and adjusting a dissecting and compound microscope for different types of samples.
- Draw, describe and classify an unknown organism from a field sample while comparing it to similar species from literature.

Textbooks and Additional Resources:

Textbook: There is no textbook that specifically covers the contents of this course. Instructors will suggest readings from the first year biology text, **Freeman, Harrington and Sharp, *Biological Science*.** This text will be used primarily as a reference in Biology 203 to remind students about the important background that will make the lecture material easier to understand, so any edition should be fine. If students don't wish to purchase the text, copies are available for short-term loan from the Biology Office and are available to use in the Biology Learning Centre. Other general biology texts that cover basic cell structure, mitosis and meiosis are also acceptable.

Course website: Access on canvas.ubc.ca.

Evaluation:

Assessment	Weight	Notes
Lab Total	**40%**	Break down: 9% Lab Quizzes 2% Lab Assignments and Drawings 20% Species Description 4.5% Poster 4.5% Microscope Quiz
Lecture	**60%**	Break down: 15% Mid Term 1 15% Mid Term 2 30% Final (cumulative)

Schedule of Topics:

Lecture Schedule (example from 2018W1)**:**

Week	Lecture Topics
1	Introduction 1 – What is a Protist
2	Introduction 2 – Trees, taxonomy & phylogeny Origin 1- Origin of Eukaryotes & Mitochondria
3	Origin 2 - Origin of Eukaryotes from top down Origin 3 - Endosymbiosis & Mitochondria
4	Origin 4 - Endosymbiosis & plastids Origin 5 - Endosymbiosis & plastids
5	**Mid Term Exam I** Diversity 1 – Amoebozoans, Opisthokonts
6	Diversity 2 – Excavates, Plants Diversity 3 – Chromists
7	Protists as pathogens (in humans, other animals and plants) Feeding
8	Ecology 1: Terrestrial Ecology 2: Aquatic
9	**Midterm Exam II** Buoyancy, Osmoregulation
10	Skeletons Sex and Life Cycles
11	Process 4 – Infection Process 5 – locomotion
12	Process 6 – Genomics Process 7 - Information genes expression
13	Wrap up – Why does all this happen? Review

Lab Schedule (example from 2019W1)**:**

Week	Lab Topics
1	No labs
2	Lab 1 – Making a van Leeuwenhoek Microscope
3	Lab 2 – Using Microscopes
4	Lab 3 - Classifying and Drawing Microorganisms
5	Lab 4 - Staining, Fixing Drawing Microorganisms **In Lab Microscope Quiz**
6	Lab 5 - Amoeba
7	No Labs
8	Lab 6 - Field Trip, Initial Observation of Field Material Enrichment
9	Lab 7 – Work on Species Description Assignment
10	Lab 8 – Work on Species Description Assignment
11	Lab 9 – Species Description Assignment
12	Lab 10 – Three-Dimensional Thinking: The Flora of the Termite Hindgut
13	Lab 11 – Poster Session **Final Paper due**

University Policies:

UBC provides resources to support student learning and to maintain healthy lifestyles but recognizes that sometimes crises arise and so there are additional resources to access including those for survivors of sexual violence.

UBC values respect for the person and ideas of all members of the academic community. Harassment and discrimination are not tolerated nor is suppression of academic freedom.

UBC provides appropriate accommodation for students with disabilities and for religious, spiritual and cultural observances.

UBC values academic honesty and students ae expected to acknowledge the ideas generated by others and to uphold the highest academic standards in all of their actions.

Details of the policies and how to access support are available on the UBC Senate website.