



Winter Session 2017 MCB Professional Science Master's (PSM) Courses

We are offering 1 and 2 credit laboratory modules during the winter session 2017. One-credit modules are 2.5 days long and two-credit modules 5 days. These courses combine hands-on experiments with lectures on the theoretical background. Any number and combination of modules may be taken and the credits applied toward undergraduate or graduate degrees. **Graduate tuition rates apply.** These sections are **not** open to enrollment through continuing studies.

The modules are listed below. Please contact elaine.mirkin@uconn.edu for permission numbers. Seats are limited.

The two-credit MCB 5671 **Microbial Genome Sequencing, Assembly and Annotation** module utilizes the Minlon Mk 1B from Oxford Nanopore Technologies (<https://nanoporetech.com/products/minion>) to obtain long reads. This is a very new technology that can provide long reads using an inexpensive Next Generation Sequencing instrument for a wide range of applications in eukaryotic and prokaryotic genomic studies. Students will learn how to assemble the nanopore reads and how to combine them with Illumina generated reads to improve the assembly. The genomes will also be annotated.

The one-credit MCB 5671 **Advanced Liquid Handling and Sample Processing** module will train students in the use of automated liquid handling robots from Eppendorf and Qiagen (EpMotion 5075 and QIAgility). In addition, students will learn how to use a fluorescent plate reader and a capillary gel electrophoresis system (QIAxcel). Students will also be trained in using multi-channel and electric hand-held pipettes. This course exposes students to technology used in companies to automate workflow and save on labor costs. In addition, students are trained on this equipment, which is not typically available at universities in teaching settings.

Please contact joerg.graf@uconn.edu for additional information on these courses.

Please keep the following in mind. A request for a permission number and registration in any one of the courses is a commitment to complete the course. Please do not request a permission number until you are sure of your commitment. All of the courses are very popular and once a permission number is issued that spot is no longer available to another student.

Information on graduate tuition and fees for the winter intersession can be found on the [Winter Session 2017 website](#) under Fees and Dates.

MCB 5671-1 Advanced Theory and Practice of Laboratory Techniques in Microbiology Topic – Microbial Genome Sequencing, Assembly and Annotation

2 credits

Enrollment limit 6

Instructors: Joerg Graf, Lidia Beka, and Sarah Goldstein

Room TLS 277 (January 4 to 6, 2017) and BPB 201 (January 6, 9 and 10, 2017)

January 4, 2017: 9 a.m. to 5 p.m.

January 5, 2017: 9 a.m. to 5 p.m.

January 6, 2017: 9 a.m. to 5 p.m.

January 9, 2017: 9 a.m. to 5 p.m.

January 10, 2017: 9 a.m. to 5 p.m.

Contact elaine.mirkin@uconn.edu for permission number. This section is closed to non-degree and BGS enrollment. Prerequisite is MCB 5427 Introduction to Molecular Biology Techniques or permission of instructor. In this module, each student will sequence, assemble and annotate a bacterial genome. The sequencing will be done using the new Minlon from Oxford Nanopore Technologies. The data analysis will include de novo assembly as well as annotation. The data analysis will be done using a range of freely available and commercially available software.

MCB 5671-2 Advanced Theory and Practice of Laboratory Techniques in Microbiology
Topic – Advanced Liquid Handling and Sample Processing

1 credit

Enrollment Limit 6

Instructors: Joerg Graf and Susan Janton

Room Beach 204

January 11, 2017: 9 a.m. to 5 p.m.

January 12, 2017: 9 a.m. to 5 p.m.

January 13, 2017: 9 a.m. to 12 p.m.

Contact elaine.mirkin@uconn.edu for permission number. This section is closed to non-degree and BGS enrollment. Prerequisite is MCB 5427 Introduction to Molecular Biology Techniques or permission of instructor. Participants will learn how to program and use Eppendorf's EpMotion5075, equipped with vacuum and a thermomixer, and Qiagen's QIAgility for setting up dilution series and PCR reactions. In addition students will learn how to use an automated tube sorter with a bar code reader from BioMicroLab, XL200.