

# Syllabus

Download a more detailed version of the Overall Course Syllabus [here](#).

Download a more detailed version of the Proteomics Unit Syllabus [here](#).

Download a more detailed version of the Proteomics Unit Readings [here](#).

## Week 1

T Sept 4 Intro to "-omics" analysis

R Sept 6 Lecture: Sequencing Technologies and Applications

F Sept 7 Lab: NCBI Genomes

## Week 2

T Sept 11 Discussion: Draft Genomes

R Sept 13 Lecture: Sequence similarity searches and genome alignment

F Sept 14 Lab: Pectobacterium draft genome alignment

## Week 3

T Sept 18 Discussion: Genome Alignment

R Sept 20 Lecture: Gene Prediction and HMMs

F Sept 21 Lab: Pectobacterium Gene Prediction - Concordance and Conflict

## Week 4

T Sept 25 Discussion: Under and Over prediction of genes

R Sept 27 Lecture: Assigning function based on sequence similarity

F Sept 28 Lab: BLAST & InterPro to predict function of Pectobacterium genes

## Week 5

T Oct 2 Discussion: Manual vs. automated annotation

R Oct 4 Lecture: Orthology, Paralogy, Xenology - Does it matter

F Oct 5 Lab: Predicting Pectobacterium orthologs using BLASTP

## Week 6

T Oct 9 Discussion: Orthologs and Function

R Oct 11 Lecture: Phylogeny

F Oct 12 Lab: Phylogeny of Pectobacterium orthologs

## Week 7

T Oct 16 Discussion: Phylogenetic Profiling to infer Function

R Oct 18 Lecture: "Etceroomics" Experimentation

F Oct 19 Lab: Work on your Project

Week 8

T Oct 23 Lecture: Transcript Sequencing vs. Hybridization

R Oct 25 Intro to section & brief overview of proteomics

F Oct 26 Free time to work on your project

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Week 9

T Oct 30 Discussion: Functional Genomics using RNAi

R Nov 1 Discussion: Chemical Genetics

F Nov 2 Lab: RNAi web-based tools

Week 10

T Nov 6 Discussion: 2D gel analysis

R Nov 8 Discussion: MuDPIT

F Nov 9 Tour of proteomics facility

Week 11

T Nov 13 Discussion: Biological Networks: Y2H approaches

R Nov 15 Discussion: Biological Networks: TAP tag approach

F Nov 16 Lab: Creating a Network using Osprey

Week 12

T Nov 20 Lecture: Microarray Analysis

R Nov 22 Thanksgiving Break

F Nov 23 Thanksgiving Break

Week 13

T Nov 27 Discussion: Microarray Analysis

R Nov 29 Lecture: Clustering array data

F Nov 30 Lab: Microarray clustering

Week 14

T Dec 4 Discussion: Microarray Analysis

R Dec 6 Lecture: Regulatory inferences from array data

F Dec 7 Lab: Microarray motif finding

Week 15

T Dec 11 Student Project Presentations

R Dec 13 Student Project Presentations

F Dec 14 Student Project Presentations