

Protein Engineering BME 1459 (Winter 2024)

Course Outline

K. Truong

Instructor and Lecture Information

Instructor	Kevin Truong	
Office	Mining 316	
Email	kevin.truong@utoronto.ca	
Office Hours	Arrange meetings in class or by email	
Lecture Room and Times	MY480	F 2-4

Grading

Presentations	45%	Research Proposal	45%	Discussion	10%
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Web Page: Quercus

Synopsis: Protein engineering has advanced significantly with the emergence of new chemical and genetic approaches. These approaches have allowed the modification and recombination of existing proteins to produce novel enzymes with industrial applications and furthermore, they have revealed the mechanisms of protein function. In this course, we will describe the fundamental concepts of engineering proteins with biological applications. A background in molecular biology is recommended. Course topics include: review of the fundamentals of molecular biology, random mutagenesis, site-directed mutagenesis, non-canonical amino acid substitution, DNA recombination, directed evolution and fusion proteins

Learning Objectives

- Develop an understanding on the key techniques for engineering proteins to perform a diverse range of functions
- Develop a research idea on protein engineering