

Outline Syllabus for an MDH mCURE targeted for 2nd Semester Chem/Bio Majors

Virtual vs Hybrid Teaching

Big Picture Focus: Drug Design

Parasite vs Host MDH

Pick your Pathogen

Key CURE Elements: Relevance, Scientific Background, Hypothesis Development, Proposal, Experiments/Teamwork to test hypothesis, Data Analysis and Conclusions, and Presentation

Concept/Content Focus:

Chemistry: NonCovalent Interactions, Structure-Activity Relationships, pKa

Biology: Central Dogma, Protein Structure-Function Relationships

Introductory Week: Goals of the Course, Key Background Bootcamp

Week	Virtual Focus	Hybrid or Wet lab Focus	CURE Element	Comments
1	Big Picture & Background, Molecular Visualization	Big Picture & Background Start Hypothesis Development	Relevance, Scientific Background	Faculty selects general area to focus discussion, paper relevant to MDH and area of focus
2	Proscribed Lab 1			
3	Proscribed Lab 2			
4	Proscribed Lab 3			
5	Hypothesis Development & Proposal	Hypothesis Development & Proposal	Hypothesis & Proposal	Focused hypothesis- one or two predictions and experiments planned
6	Proscribed Lab 4			
7	Proscribed Lab 5			
8	Proscribed Lab 6			
9	CURE Project L1	pKa Impact, pH titrations	Experiments	Wildtypes to start with, create mutant
10	CURE Project L2	Mutations	Experiments	Characterize mutant
11	CURE Project L3	pKa Impact	Experiments	Mutant experiments

12	CURE Project L4	SwissDock Binding	Data Analysis	Study binding related to hypothesis, wt & mutant
13	CURE Project L5	Data Analysis	Conclusions	Data analysis, st errors etc, how to represent etc

Final Week: Presentations