Lecture Topic
Class Overview - Synthetic Biology Introduction - What, who, why, how
Synthetic Biology Introduction - Biology Primer, Parts, Devices, Systems
Synthetic Biology Introduction - Experimental Processes Primer
Synthetic Biology Introduction - Automation/Software Primer
Specification - Overview, Approaches, Challenges
Specification - Structure, Constraints, Design Spaces
Specification - Function, Performance
Design - Overview, Approaches, Challenges
Design - Transformation, Mapping, and Assignment
Design - Design of Experiments
Assemble - Overview, Approaches, Challenges
Assemble - DNA assembly planning and dynamic programming
Assemble - Liquid handing and scheduling
Spring Break
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In Depth Topic - SBOL, Standards
In Depth Topic - Codon Optimization, Sequence Analysis
In Depth Topic - Registries, SynBioHub, and Data Models
In Depth Topic - Modeling and Simulation
In Depth Topic - Data mining, pattern analysis, machine learning
In Depth Topic - Neptune, MINT, 3duF and Microfluidic Primitives
Company Presentation - TBD
In Depth Topic - Models of Computation
In Depth Topic - Developmental Synthetic Biology
In Depth Topic - Automation / CRISPR-Cas9 genome editing
Company Presentation - TBD
Project Presentations - Day 1
Project Presentations - Day 2
Project Post Mortem