East EPO Course Overview for Calculus:

Disciplinary long-term transfer goals aligned with mission/vision:
- Transfer Goal #1: Think purposefully by developing a plan that utilizes mathematical thinking and tools strategically when approaching a problem.
- Transfer Goal #2: Flexibly use the connection between real-world contexts and abstract mathematical representations to develop reasonable solutions.
- Transfer Goal #3: Communicate mathematical ideas clearly while using appropriate language: by constructing viable arguments OR by critiquing the reasoning of others.

Pacing Guide:

Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun

Unit 1 Overview of Calculus	Unit 2 Limits	Unit 3 Derivatives				Unit 4 Applications of Derivatives	Unit 5 Integrals	Review and Final Exam	

Unit Overviews

Unit 1:	Understandings:	Essential Questions:
Overview of Calculus	Slope is the average rate of change of y as x increases.	How are average rate of change, instantaneous rate of change, and the derivative related?
Transfer Goal: Communicate mathematical ideas clearly while using appropriate language: by constructing viable arguments OR by critiquing the reasoning of others.		
CEPT/Performance Task: There is no formal assessment associated with this short opening unit. **Criteria for Success:**		

Unit 2:	Understandings:	Essential Questions:
Limits	Limits can represent the tendency of a function at a value that would otherwise be undefined. There are properties of limits that assist in evaluating certain limits.	What happens to a function when the input approaches a specific value? What happens to a function when the input becomes infinitely large?

	Theorems involving functions allow you to make generalizations about functions.	

Transfer Goal:
Think purposefully by developing a plan that utilizes mathematical thinking and tools strategically when approaching a problem.

Performance Task:
Students will take an on demand performance assessment to assess their progress toward the unit goals and understandings.

Criteria for Success:

Unit 3:	Understandings:	Essential Questions:
Derivatives	Limits make it possible to find an instantaneous rate of change. Properties and rules of derivatives are derived from the limit definition. There are properties of derivatives that can be applied creatively to assist in evaluating them.	What is the meaning of the derivative of a function in context? How are graphs of functions and graphs of their derivatives related?

Transfer Goal:
Flexibly use the connection between real-world contexts and abstract mathematical representations to develop reasonable solutions.

Performance Task:
Students will take an on demand performance assessment to assess their progress toward the unit goals and understandings.
Criteria for Success:
Student classwork, homework, exit tickets, and other informal assessments will be used to gauge student progress.

Unit 4:	Understandings:	Essential Questions:
Applications of Derivatives	Derivatives can be used to solve many "real world" problems involving related rates or optimization. Analysis of the derivatives of a function allow you to find critical values of a function's graph.	How are derivatives used in problem solving situations? How can calculus be applied to graphing a function?

Transfer Goal:

Think purposefully by developing a plan that utilizes mathematical thinking and tools strategically when approaching a problem.

Performance Task:
Students will take an on demand performance assessment to assess their progress toward the unit goals and understandings.
Criteria for Success:
Student classwork, homework, exit tickets, and other informal assessments will be used to gauge student progress.

Unit 5:	Understandings:	Essential Questions:
Integrals	Geometric methods can be used to make approximations for the area under a curve. The Mean Value Theorem has powerful implications for finding integrals. Integration can be used to solve real world problems in context.	How are integrals related to derivatives? How do limits make it possible to find the area under a curve?

Transfer Goal:
Communicate mathematical ideas clearly while using appropriate language: by constructing viable arguments OR by critiquing the reasoning of others.

Performance Task:
Students will take an on demand performance assessment to assess their progress toward the unit goals and understandings.
Criteria for Success:
Student classwork, homework, exit tickets, and other informal assessments will be used to gauge student progress.