Calculus I Metrics

Description

This course is the first in the calculus sequence designed for the engineering, science, or mathematics major. Topics include functions and limits, techniques and applications of differentiation, indefinite and definite integrals, and applications of integration.

Minimum Contact Hours

56

Assessment Rubric

CS. 6. Apply fundamental theorems and rules of Calculus to differentiate and integrate algebraic, trigonometric, inverse trigonometric and transcendental functions.

Emerging Standard
Exhibits limited understanding when differentiating and integrating functions using differential calculus; additional review and support is required.
Developed Standard
Independently differentiates and integrates various functions using differential calculus.
Highly Developed Standard
Independently and with a thorough understanding differentiates and integrates various functions using differential calculus.

CS. 7. Apply fundamental theorems and rules of Calculus to evaluate limits and analyze the continuity of various functions.

Emerging Standard
Exhibits limited understanding when computing limits and determining continuity; additional review and support is required.
Developed Standard
Independently computes limits and analyzes the continuity of various functions.
Highly Developed Standard
Independently and with a thorough understanding computes limits and analyzes the continuity of various functions.
CS. 8. Apply fundamental theorems and rules of differentiation to solve problems that model real-world situations.

Emerging Standard
Requires a great deal of assistance to solve problems drawn from real-world situations.
Developed Standard
Independently solves problems drawn from real-world situations.
Highly Developed Standard
Very capably and independently solves problems drawn from real-world situations.

CS. 16. Construct symbolic models of applied problems described in words.

Emerging Standard
Requires a great deal of assistance to interpret word problems drawn from a variety of sources into symbolic representations.
Developed Standard
Independently interprets word problems drawn from a variety of sources into symbolic representations.
Highly Developed Standard
Very capably and independently interprets word problems drawn from a variety of sources into symbolic representations.

CS. 31. Use fundamental concepts of Calculus to construct graphs of polynomial, rational and exponential functions.

Emerging Standard
Constructs graphs of polynomial, rational and exponential functions with frequent errors and omissions; displays a weak understanding.
Developed Standard
Independently constructs graphs of polynomial, rational and exponential functions.
Highly Developed Standard
Independently and with a thorough understanding constructs graphs of polynomial, rational and exponential functions.

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