



Syllabus

VU Mathematics Summer Course 2019

Version April 30th 2019

1. Rules of differentiation

- Rules of computation for the derivative
- Applications of derivatives
- Conclusion of rules of differentiation

2. Introduction to differentiation

- Definition of differentiation
- Calculating derivatives
- Derivatives of exponential functions and logarithms
- Conclusion introduction to differentiation

3. Integration

- Introduction
- Antiderivation
- Area
- Integral

- Estimates
- The Fundamental Theorem of Calculus
- End of Integration

4. Exponential functions and logarithms

- Derivatives of exponential functions and logarithms

5. Functions

- Functions and graphs
- Linear functions
- Quadratic equations and parabolas
- Fractions of functions
- Power functions and root functions
- Inverse functions

6. Calculating with numbers (not mandatory)

- Integers
- Rational numbers
- Roots
- Real numbers

7. Calculating with variables (not mandatory)

- Variables
- Calculating with exponents
- Expanding brackets
- Factorization

- Notable Products
- Adding and subtracting fractions

8. Equations

- Linear equations and inequalities
- Quadratic equations
- Two equations with two unknowns