

**Pharmacy Mathematics**  
**Autumn semester, 2023/24**

Week	Date	Number	Title	Lecturer	Seminar topic	Seminar1	Seminar 2
1	5, Sept	1-2	Introduction to mathematics: sets and classification of numbers. Order of operations, rounding numbers, scientific notation, direct and inverse proportionality, units and their conversions, prefixes.	HP	Plotting on graph paper, describe a linear function, typical functions	HP	HP
2	12, Sept	5-6	Linear and quadratic eqations, systems of equations. Logarithms and exponentials.	HP	Transforming functions, graphing	BZS	BZS
3	19, Sept	9-10	Vectors, coordinate geometry and functions (basic types, transformations, inverse functions). Slope and equations of a line. Fundamentals of trigonometry. Area and volume of geometrical figures. The concept of limit, some limit theorems, continuity, some theorems on continuous functions.	HP	Composite function, inverse function, basic limits	KT	KT
4	26, Sept	13-14	Infinite series, compound interest, limit of sequences.	HP	Limit calculation of functions	PF	PF
5	3, Oct	17-18	Some definitions of derivatives, limit of sequences.	HP	Differentiation, application I	VZ	ZF
6	10, Oct	21-22	The Chain rule, derivatives of trigonometric functions, Implicit differentiation and higher derivatives.	HP	Differentiation, application 2 (extreme values, convexity, monotonicity)	PF	PF
7	17, Oct	25-26	Differentials and Newton-Raphson approximations, L'Hopital's rule, application of derivatives.	HP	SCT 1	HP	NE
8	24, Oct	29-30	Integration, an area problem, definition of definite integral, some theorems on integral calculus, fundamental theorem of calculus.	HP	week 7 and 8	HP	NE
9	31, Oct	33-34	Area between graphs, more applications of integral calculus.	HP	week 9	HP	NE
10	7, Nov	37-38	Formal integration, indefinite integrals, integration by parts, trigonometric integrals.	HP	week 10	HP	NE
11	14, Nov	41-42	Integration by trigonometric substitution, partial fraction.	HP	week 11	HP	NE
12	21, Nov	45-46	Numerical integration, trapezoidal rule, Simpson's rule.	HP	week 12	HP	NE
13	28, Nov	49-50	Differential equations.	HP	SCT 2	HP	NE
14	5, Dec	53-54	Application of differential equations in biochemistry, Michaelis-Menten equation of enzyme kinetics.	HP	week 13 and 14	HP	NE