

Prep course for mathematical master programs

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Daily planning

09:00 – 09:15	Questions
09:15 - 11:15	Lecture
11:30 - 13:00	Exercices
14:00 - 14:15	Questions
14:15 – 15:45	Lecture
16:00 - 19:00	Exercices

Schedule

Monday ► Linear algebra

Some universal properties
Diagonalization and eigenvalues
Tensor Product
Exterior algebra

Tuesday ► Differential geometry

Submanifolds
an overview of manifolds
Tangent space
Vector fields
differential forms
Hodge star operator

Wednesday ► Function spaces

Metric topology and norms
Banach spaces and Hilbert Spaces
Function spaces
Distribution
Fourier Transformation

Thursday ► Symmetries

Groups
Groups of matrix
Exponential of matrix
Lie Groups
Lie Algebra

Friday ► Operators

Banach spaces again
Spectrum of operators
C* algebra
Perhaps we will see again few points that were unclear