

## FSF3624 RANDOM MATRICES, 7,5 HP

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### 1. COURSE DESCRIPTION

The course is a basic course in random matrix theory for graduate and advanced undergraduate students. The goal of the course is to discuss the basic results in random matrix theory and also give some insight into the relation of random matrix theory to other areas, e.g. spectral theory and two-dimensional statistical physics.

### 2. SYLLABUS

Basic ensembles in random matrix theory. The statistics of the eigenvalues for unitary matrices, invariant and non-invariant ensembles of Hermitian matrices. Determinantal point processes. Global and local eigenvalue statistics. Limiting distributions and processes for eigenvalue statistics. Some results about 1+1 dimensional local growth models, random permutations and random tilings.

### 3. PREREQUISITES

Basic integration theory (e.g. SF 2709 Integration theory), basic probability theory and some basic functional analysis.

### 4. LITTERATURE

Hand-outs and lecture notes. A list of recommended litterature will be handed out at the beginning of the course.

### 5. EXAMINATION

One or two home assignments and an oral presentation on some topic related to the course.