

|            | Lecture Monday 10:15-11:45  | Seminar Monday 16:15-17:45                            |
|------------|---|---|
| 03.09.2018 | Gauss elimination, vector spaces, linear independence, basis, basis transform,                            |   |
| 10.09.2018 | linear transformation, eigenvalues, eigenvectors, scalar product, orthogonal matrices, symmetric matrices | Linear algebra I                                      |
| 17.09.2018 | determinant, Cramer rule, Gauss-Jordan elimination, trace   |   |
| 24.09.2018 | fundamental subspaces, dimension theorems, orthogonal projections, method of smallest squares             | Linear algebra II                                     |
| 01.10.2018 | positive definite matrices, singular values, polar decomposition, spectral decomposition                  |   |
| 08.10.2018 | partial differential equations, Fourier-series, sine Fourier-series, vibrating string                     | Linear algebra III<br>partial differential equation I |
| 13.10.2018 | Bernoulli solution, D'Alembert's solution   | partial differential equation II                      |
| 15.10.2018 | infinite length rod, Heat equation  |   |
| 22.10.2018 | National holiday  | National holiday                                      |
| 29.10.2018 | midterm test  |   |
| 05.11.2018 | vector analysis, line integral, conservative fields,  | PDE III vectoranalysis I                              |
| 12.11.2018 | Curl-test on plane, on space, potential function, surface integrals,                                      |   |
| 19.11.2018 | extra midterm test  | vectoranalysis II                                     |
| 26.11.2018 | Gauss theorem, Stokes theorem   |   |
| 03.12.2018 | Green theorem, surfaces   | vectoranalysis III                                    |

Saturday lectures to replace the lecture on 22.10.2018, Monday.