Description of the course of Michael Rapoport
"Vector bundles on algebraic curves"

Let X be a smooth projective curve over an algebraically closed field. A vector bundle on X is an algebraic fiber space in vector spaces or, equivalently, a locally free coherent $\mathcal{O}_X$-module. When the genus of X is 0, vector bundles on X can be classified (Birkhoff, Grothendieck). Something weaker can be done when the genus of X is 1 (Atiyah). In higher genus, this seems impossible, and one is lead to consider instead the moduli space of all vector bundles of given rank and degree. The course will discuss this theory, and also provide some background in and vistas on algebraic geometry as a whole. The prerequisites are some basic knowledge in algebraic geometry–this course is intended to strengthen this knowledge by seeing it applied to a topic of general interest.

PS: I am looking for a notetaker on the computer (TEX in real time).