Atomic force microscopy (AFM) has become a powerful tool to study biomolecules with high spatial resolution. Because the technique does not require any modification of the sample, biomolecular systems can be studied under near-physiological conditions. Structural information is obtained either by imaging or by mechanical manipulation of intramolecular bonding. Furthermore, AFM can be used to study intermolecular interactions, for instance of receptor-ligand pairs. The forces accessible to AFM cover a broad range, from low pN to μ N, allowing to resolve even the breaking of single bonds. Resolution capabilities of AFM imaging are in the low nm range, sufficient to provide information at the level of the individual molecules. In the offered module, we give an introduction into AFM measurements on biomolecules, e.g. the study of lipid bilayers on solid support.