Abstract: This work is focused on linear error-correcting codes over chain rings. By a linear code over a chain ring R of length n, we mean a R-submodule of the module R^n. The basic introduction to the theory of finite commutative chain rings and linear codes over them is given. We especially emphasize here their algebraic description. Minimal homogenous and Hamming distances of these codes are extensively studied. We explain, how the generalized Gray map can transform linear codes over a chain ring into general non-linear codes over a field. We deal with the construction of linear codes over a chain ring and the construction of generator matrices based on random generation is described. Obtained codes are compared with known results.