Today, industrial automation is considered a very wide area and is used to optimize productivity in a wide variety of industrial production and service facilities. Communication networks used in industrial automation are divided into different levels (e.g. field, control, server, plant), with each network using specialized protocols. A wireless approach for the field network can potentially lead to significant cost savings and ease of operation. This course explores the existing wireless solutions for communication among field devices and how these solutions can achieve a high quality and secure communication while dealing with strict requirements (e.g. low latency) typical of industrial, functionally safe communication. We also identify open problem areas in the use of wireless communication networks for industrial process control.