

## **Safety in MRI Hands on Course**

This course handles three main topics. The first topic focuses on the measurement of the static magnetic field inside and outside the examination room. Hall effect sensors (Gaussmeters) which indicate flux lines when placed perpendicular to the magnetic field will be considered for field surveys. Measurements of average, peak and root mean square magnetic field with transverse and axial probes will be demonstrated. Techniques to depict the 0.5 mT isomagnetic line around the scanner will also be discussed. The second topic addresses evaluation of radiofrequency (RF) shielding. Instrumentation and techniques employed on checking the RF shielding will be reviewed. RF leakage of the Faraday cage will be determined in terms of shielding effectiveness, which constitutes the ratio of the RF energy on one side of the shield to the RF energy on the other side of the shield, expressed in decibels. The third topic touches upon the oxygen concentration and ventilation issues within the examination room. In this context, normal and emergency ventilation evaluation guidelines and practices, as well as helium safety procedures, will be examined. Furthermore, oxygen monitoring and alarm systems for fast and reliable response to oxygen depletion in MRI operation rooms will be considered.