*Master Course "Medical Image Processing for guidance and navigation"*

The course of *Medical Image Processing for guidance and navigation* (9 ECTs, 6 SWS) is designed to provide students with the knowledge and skills required to analyze, interpret, and process medical images with the aim of guiding medical procedures and/or navigating within the human body during interventions or therapies.

The course consists of three parts:
1) Medical Imaging technologies for planning and *in-room* navigation, where the requirements and the set up for the hardware required in the OR are illustrated.
2) Medical Image Processing, which introduces the basics of analysing and extracting quantitative information from images. This part exploits the use of Python and Jupyter notebooks.
3) Surgical navigation, dedicated to tracking system and image registration.
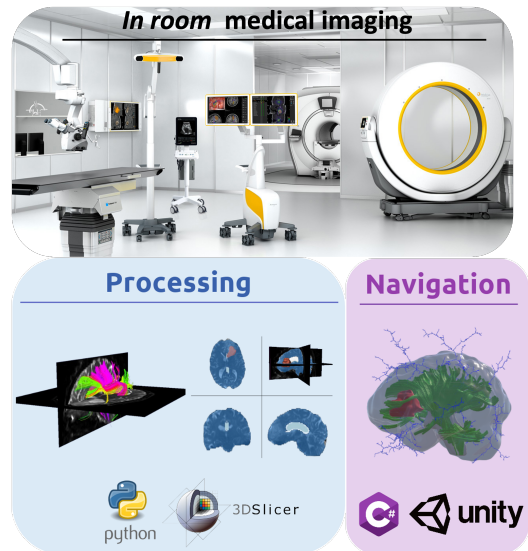
Among the possible clinical use cases are neurosurgery, radiotherapy, interventional cardiology.

The course is limited to maximum 30 students where the priority is given to:

1) ETIT Master students with specialization in Biomedical Engineering
2) ETIT, Mechatronics and Computer Science Master Students who have attended some course in medical imaging
3) Master students of other disciplines with strong interest in medical images

The following expertise/skills are recommended:
-       Basic knowledge in the field of medical imaging;
-       Knowledge of basic programming concept;
-       Basic knowledge of linear algebra (transformations);
-       Attitude towards teamwork;
It is also preferable to have access to a personal computer or desktop.

The course will take place every Wednesday from 11.30 to 13.00 and Thursday from 9.45 to 11.15 and from 11.30 to 13.00

The course will probably include 2 excursion2 to companies

To enroll to the course please write an email to mf.spadea@kit.edu motivating your choice.