

**Course Syllabus for**  
**Electrical and Information Engineering PhD or Industry 4.0 PhD (select one)**  
**(years 2022-23 /2023-24)**

<b>Course title</b>	Electronic, Information and Industrial Bioengineering
<b>Scientific Discipline Sector</b>	ING-INF/06
<b>Hours of instruction</b>	20 hours
<b>CFU</b>	2 CFU
<b>Semester</b>	Second semester
<b>Goal</b>	<p>The course shall address the intelligent diagnostic frameworks and systems based on image and signal processing with particular focus on precision medicine and bioengineering industry scenario and enabling technologies like Virtual and Augmented Reality.</p> <p>The course participants will be able to process and understand medical and industrial images and signals, to design innovative frameworks for robotic navigation, inspections and intervention in assisted surgery and in sustainable and safe industry 4.0.</p>
<b>Syllabus</b>	<p>Intelligent Industrial and Medical Image Processing Theory and Applications (10 h)</p> <p>Virtual and Augmented Reality for Training and Assessment  Head Mounted Assisted Surgery and Industrial Frameworks (5 h)  Robotic Surgery and Surgical Navigation Systems (5 h)</p>
<b>Bibliography</b>	Slides and support material from lecturer.
<b>Examination method</b>	Final examination in class