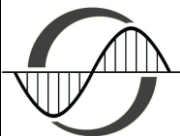




UNIVERSITÀ
degli STUDI
di CATANIA



DIPARTIMENTO DI FISICA E ASTRONOMIA
“ETTORE MAJORANA”

DOTTORATO DI RICERCA IN FISICA
CICLO XLII A.A. 2026/2027

Advanced Physics of Medical Imaging

CFU - 2

Teaching staff

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Reception hours: upon student request

Program of the course:

Advanced X-Ray 2D/3D imaging techniques; Patient Dose, Exposure Index, iterative reconstruction, quantitative imaging, advanced contrast mechanisms; applications

Innovative MRI techniques; high and ultra high-field MRI; conventional and not conventional magnetic resonance imaging; functional and metabolic imaging; emerging low-field technologies; applications

Bibliography:

Bushberg, Jerrold T., and John M. Boone. The essential physics of medical imaging. Lippincott Williams & Wilkins, 2012.

Ma CM, Coffey CW, DeWerd LA, Liu C, Nath R, Seltzer SM, Seuntjens JP; American Association of Physicists in 27 Medicine. AAPM protocol for 40-300 kV x-ray beam dosimetry in radiotherapy and radiobiology. Med Phys. 2001 28 Jun;28(6):868-93.

Scientific paper and slides provided by the teacher