32080 - MI - Medical Imaging

Coordinating unit: 230 - ETSETB - Barcelona School of Telecommunications Engineering
Teaching unit: 731 - OO - Department of Optics and Optometry
Academic year: 2015
Degree: MASTER'S DEGREE IN PHOTONICS (Syllabus 2009). (Teaching unit Optional)
ERASMUS MUNDUS MASTER'S DEGREE IN PHOTONICS ENGINEERING, NANOPHOTONICS AND BIOPHOTONICS (Syllabus 2010). (Teaching unit Optional)
DOCTORAL DEGREE IN PHOTONICS (Syllabus 2007). (Teaching unit Optional)
ECTS credits: 2,5 Teaching languages: English

Teaching staff
Coordinator: I. Juvells (UB)
Others: J. Pladellorens (UPC)

Teaching methodology
Presencial Teaching + activities

Learning objectives of the subject

In this course the physics behind the most important medical imaging modalities will be treated. After an introductory lecture, microscopic imaging (optical, electronic, atomic force), radiology (X-ray, computer tomography), nuclear imaging (SPECT and PET) and magnetic resonance imaging (NMR) will be discussed. The increasing importance of medical imaging for diagnosis and guiding surgery will be emphasized.
Content

(ENG) Introduction

Degree competences to which the content contributes:

(ENG) Image Processing Techniques.

Degree competences to which the content contributes:

(ENG) Radiology

Degree competences to which the content contributes:

(ENG) Nuclear Magnetic Resonance (NMR)

Degree competences to which the content contributes:

(ENG) Biomedical image reconstruction

Degree competences to which the content contributes:

(ENG) Examples of Image Processing in Nuclear Medicine

Degree competences to which the content contributes:

Qualification system

The evaluation criteria will be twofold. Firstly, we will consider activities developed by the students along the course (as algorithm developing, further study of some question, etc.). These activities will be evaluated through a written report or an oral presentation. Secondly, through some kind of final examination to insure that the alumni have a general understanding of the issues taught in the course.

Regulations for carrying out activities

The usual in University teaching
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Bibliography

Basic:


