



CHIM2471 Nuclear chemistry

[22.5h+0h exercises] 2 credits

This course is taught in the 1st semester

Teacher(s): Jean Ladrière
Language: French
Level: Second cycle

Aims

The course aims at giving an extended knowledge of the atomic nucleus, stable and unstable, in order to master the theoretical concepts related to, and the various applications of isotopes, radioactivity and nuclear reactions. This course is proposed to all students wanting to acquire or complete a basic formation in fields where radioactivity and ionizing radiations are used.

Main themes

The course contains a description of fundamental physical properties of the atomic nucleus allowing an in-depth analysis of stability or of different modes of nuclear decays of the isotopes of all elements. It also describes the basic principles of nuclear reactions used to produce radioelements or nuclear energy. Finally, the use of tracers and the measurement of their radioactivity are applied in various fields (chemistry, biology, medicine, archaeology).

Other information (prerequisite, evaluation (assessment methods), course materials recommended readings, ...)

Prerequisites: candidature in sciences.

Evaluation: written examination.

Support: syllabus and overhead transparencies used by the teacher.

Other credits in programs

CHIM22	Deuxième licence en sciences chimiques	(2 credits)	
ESP31DS/RC	Première année du diplôme d'études spécialisées en santé publique (Contrôle physique en radioprotection)		Mandatory
ESP31DS/RE	Première année du diplôme d'études spécialisées en santé publique (Radioprotection de l'environnement)		Mandatory
ESP31DS/RP	Première année du diplôme d'études spécialisées en santé publique (Physique d'hôpital)		Mandatory
RPR9CE/C	Certificat universitaire en radioprotection et en application des rayonnements ionisants (Contrôle physique en radioprotection)		Mandatory
RPR9CE/R	Certificat universitaire en radioprotection et en application des rayonnements ionisants (Radiopharmacie)		Mandatory