

## Medical Physics in Tlemcen

The University of Tlemcen is offering a professionalizing master's course in medical physics and celebrating in June 2020 the release of the third class consisting of seventeen (17) laureates. This training was launched in October 2009 at the request of the MESRS and the Ministry of Health. It is jointly managed by the faculties of sciences and medicine and benefits from significant support from existing expertise at the Faculty of Technology (medical informatics, biomedical electronics) and the Faculty of Earth and Universe Sciences and Natural and living sciences (biological effects of ionizing radiation). This multidisciplinary brings a particular richness to this training but also poses a challenge of coordination of educational activities and evaluation. The major part of the teaching and pedagogical supervision is ensured by university hospitalists, either at the medical faculty or in hospital environment to allow a better impregnation of the students of the medical spirit. Students of the third year of a bachelor's degree in physics give it a particular interest, but the constraints due to the limited number of internship positions and the need for rigorous supervision in hospitals, in special services such as radiotherapy and nuclear medicine make admission to this training selective, limited to relatively small numbers. Since its opening in September 2009, only 3 promotions have come out, totaling the number of forty-four (44) laureates, holders of this master.

Like all Masters, this training takes place over four semesters in two years with a program articulated in fundamental, methodological and transversal units. In the first semester, the fundamental unit includes three modules focused on the medical use of ionizing radiation, basic concepts in biology and medicine (anatomy, physiology, semiology), health economics and the organization of the health system. . Another unit focused on clinical epidemiology, health assessment, ethics and medical ethics. Several other modules of a transversal nature are taught to students from the first semester relating to mathematical and statistical concepts, medical informatics and the organization of networks, hospital hygiene, patient relations, professional risks other than ionizing agents, and an introduction to foreign languages, in particular English.

The second semester is a deepening of knowledge relating to the biological effects of ionizing radiation and their medical uses with the introduction of other modules, relating to dosimetry, radiation protection, radio pharmacy, the use of contrast media. The methodological bases of medical imaging and detection electronics are also taught in the second semester.

The master focused on the major option of radiation protection and radiobiology, although other options were initially considered such as medical imaging and dosimetry.

The radioprotection and radiobiology option was selected as a priority because it meets the pressing and urgent needs of new national cancer centers, in medical physicists, knowing that the training possibilities in this field are quite limited in Algerian universities. The program of the 2nd year (M2) is therefore centered on this specialty. The 3rd trimester represents a strengthening of knowledge on the biological effects of ionizing radiation, radiation protection, the therapeutic use of ionizing radiation, targeted molecular therapy, in addition to organization, instrumentation and quality control. The last semester is entirely devoted to the practical internship in a hospital service, primarily the cancer center and the nuclear medicine services. An end-of-course dissertation is written by each candidate under the joint supervision of a university hospital teacher and the training supervisor. He is supported before a jury proposed by the scientific council of the Faculty of Science in close coordination with the heads of the Faculty of Medicine.

In conclusion, we can say that this training calls for the following remarks:

- It is highly desired by students in L3 (3rd year license) and encouraged by officials at all levels (university and ministry).
- It is multidisciplinary in nature and allows the synergy of several skills in different faculties (sciences, medicine, biology, biomedical engineering, etc.).
- It is part of modern developments in medicine, sciences and technology (nano medicine, nano technology)
- It responds directly to the needs of society in the area of health and quality of life.

Mustapha BENMOUNA

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