

Joint Master Degree in Biomedical Laboratory Science

The foundation of education in biomedical laboratory science (BLS) lies in the complexity model of clinical practice. This job complexity led to advanced training at the associate, bachelor and graduate degree levels to increase the professional's fundamental scientific knowledge. Subjects such as biology, chemistry, mathematics and advanced laboratory concepts became increasingly important as part of a rapidly advancing field. It is no longer enough to simply perform laboratory testing; it is expected that professionals understand and contribute to the development, performance, assessment and interpretation of laboratory results.

The Joint Master Degree in Biomedical Laboratory Sciences (JMD MARBLE) will give students access to the unique economic, political and educational space in the European Union. Top quality students attending MARBLE will deepen their knowledge in specialist disciplines of BLS. The programme promotes mobility and knowledge exchange between the institutions of the consortium, namely ESTeSC-Coimbra Health School (coordinator institution) - Portugal, Technical University Dublin - Ireland, University of Applied Sciences FH Campus Wien - Austria and University of Gothenburg - Sweden.

The JMD MARBLE will provide advanced education to prepare highly qualified BLS in areas of technological and health laboratory sciences. Content includes professional requirements in the laboratory: clinical pathology, medicine transfusion and transplants, clinical biochemistry, haematology, microbiology and cytopathology among others.

The JMD MARBLE will enhance professional competence and skills, offering students innovative possibilities for professional development and career progression together with employers to increase patient safety. The EU is nowadays an example of how BLS is taught and how the BLS profession is organized. The JMD MARBLE will cover areas of knowledge already identified as areas in which BLS should deepen their knowledge and improve their skills and competencies, adding value to the laboratories and increasing European visibility in terms of BLS education.

Our associated partners include the International Federation of Biomedical Laboratory Sciences (IFBLS), the European Association for Professions in Biomedical Sciences (EPBS), and SIEMENS, who among others will have a special role in promoting and contributing to the dissemination of this project, by advertising it on their webpages and to its members. EPBS has a policy guide for education in Biomedical Sciences which is being used not only in Europe but worldwide. In this guide, EPBS advocates that the master's degree is fundamental for the development of this profession. The partners outside Europe and all the other universities will contribute students and expertise. In fact, nowadays the laboratory organization demands a better educated BLS with leadership skills. Other countries such as the United States of America are already running Master programmes but not in the same manner as the JMD MARBLE, where a student will be awarded a degree of Master and at the same time acquire a specialization. The JMD MARBLE academic programme has been designed to address the challenges faced by laboratory medicine.

JMD MARBLE is a unique course offering biomedical laboratory specialization, taught in different countries and with the opportunity of carrying out a clinical placement in a world leading laboratory or company. It offers an international approach with academic and scientific excellence and a very close link with laboratory medicine. The professors involved are from the four institutions of the consortium and also from associated partners that develop their main scientific/professional activities in the fields that they will teach in the master's course. The majority of them are internationally recognized. The programme emphasizes both the technical and the scientific dimensions. It prepares students either for a position in a company via training in leading international companies or for an academic and research career. An initial introductory module will help students gain a comprehensive view of the course and of Europe. Students will also have the opportunity to attend local language and local culture courses to facilitate their integration in the mobility countries.

The JMD MARBLE will start at Coimbra Health School, with the Introductory Module - EU Scholarship & Integration and Diagnostic Techniques & Application, sometimes using blended learning and other technologies; these will also be applied in others modules such as Evidence Based Laboratory Medicine, Research Methods & Biostatistics Scientific Communication. At the middle of the first semester students will travel to Vienna where they will physically attend modules (Diagnostic Techniques & Application II and Molecular & Cell Biology).

The second semester of the first year will start in Gothenburg with Diagnostic Techniques & Application III and with blended learning on Project & Academic Design Writing, Pathobiology and Advanced Biomedical Laboratory Science. In the middle of the second part of the second semester the students will travel to Dublin where they will attend Diagnostic Techniques & Application IV, finishing the first academic year in Portugal with the presentation of the research project.

During the second year the students will be required to attend the blended learning module of Laboratory Design & Management. A Specialist Practice module and the master thesis must be attended in the same field of BLS in order to obtain the specialization. The Thesis and Specialist Practice should be done physically together in the same country. The Thesis defence will happen at the Coordinator Institution, Coimbra Health School.

The student will obtain a Master's degree specializing in a BLS area, signed and recognized by each member of the consortium. Only one certificate signed by the four institutions will be provided.