

Crystallography at the Master level. MCC and beyond

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In 2008 we started defining an ambitious learning program for postgraduate students as part of the education objectives of a nation-wide project to consolidate crystallographic groups and initiatives in Spain. Nine research groups from the National Research Council and five Spanish universities, contributed to this program that was implemented in 2009 as a full year official Master, "Master in Crystallography and Crystallization (MCC)", by the joint initiative of the Spanish National Research Council (CSIC) and the International University "Menendez Pelayo" (UIMP).

Designing, and running the MCC has been a challenging and enriching experience that has evolved into a larger teaming-up of the Spanish crystallographic community and a deep revision of the concepts, structure and objectives of teaching crystallography and crystal growth at the postgraduate level. The experience gathered from MCC is being used to define master-level international study programme within the Erasmus Mundus Joint Master Degrees. This program will inherit from MCC the key concepts of

Joining together students with different backgrounds and orientations: Crystallography as a common lingo
Starting with the fundamentals of crystallography and crystal growth taught by the best lecturers: Crystallography is much more than a toolbox
Offering to the students the best laboratories in Europe for practical research stages and specialized courses during the master.

Implementing these concepts in MCC involves a high level of mobility for both students and lecturers that will be too complex and expensive at the European scale. Some adaptations are needed therefore: The first module, teaching the fundamentals of Crystallography and Crystal Growth will be implemented in the form of SSOCs (Synchronous Private Online Courses) with live lectures, discussion forums and repositories of teaching materials. Unfortunately this is not the best model for students networking and building collaboration with colleagues (either other students or lecturers), companies and laboratories. To compensate for this, satellite meetings will be implemented during the ECMs, where, students will meet their mates and teachers and will show their scientific work in the real context to practice all their science communication and networking skills.

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