« Tutorial in macromolecular crystallography » 2026 edition

The tutorial will take place during one week from 9 March to13 March 2026 and is open to

PhD Students, as well as postdocs and staff of the PSB (Partnership on Structural Biology) on the EPN campus.

The aim of the tutorial is to introduce the theoretical background of crystallography and related techniques, to give a complete presentation of macromolecular crystallography techniques together with an introduction into its hands-on aspects.

The tutorial will take place during one week from 9 March to 13 March 2026. It will include 22 hours of classes (lectures and exercises) as well as two 2-hour sessions of practical training on graphical workstations and a 2 h practical in data collection on a synchrotron beamline. The language of the class is English. The tutorial is aimed at any PhD student working in the field of structural biology as well as PhD students in chemistry facing crystallographic techniques. Fundamental aspects of crystallography will be addressed as well as work with current software and the data collection on a synchrotron beamline.

The tutorial will take place in the CIBB seminar room and the CIBB graphics room on the EPN campus.

Public: **Students in biochemistry, biophysics, structural biology, chemistry; Postdocs and staff of the PSB**

Teaching volume: **30 h, 4 ECTS**

Preliminary program

<table>
<tr><th></th><th colspan="2">9:00 – 12:00 h</th><th colspan="2">14:00 – 17:00 h</th></tr>
<tr><td>Monday
9.3.2025</td><td colspan="2">Space groups and symmetry
CIBB seminar room 2nd floor
Wim Burmeister</td><td colspan="2">Protein crystallisation
CIBB seminar room 2nd floor
Monika Spano</td></tr>
<tr><td>Tuesday
10.3.2025</td><td colspan="2">Reciprocal space, mathematical background, Fourier transform, diffraction physics
CIBB seminar room 2nd floor
Wim Burmeister</td><td colspan="2">The diffraction pattern / oscillation method/scaling/twinning
CIBB seminar room 2nd floor
Andrew McCarthy, Nicolas Coquelle</td></tr>
<tr><td>Wednesday,
11.3.2025</td><td colspan="2">Molecular Replacement and NCS /
CIBB seminar room 2nd floor
Carlo Petosa</td><td colspan="2">Refinement and validation
CIBB seminar room 2nd floor
Elke De Zitter</td></tr>
<tr><td></td><td colspan="2">9:00h – 12:00 h</td><td>14:00 – 15:30 h</td><td>15h30 – 17:00 h</td></tr>
<tr><td>Thursday,
12.3.2025</td><td colspan="2">Experimental Phasing Twinning – Spacegroup ambiguities
CIBB seminar room 2nd floor
Wim Burmeister</td><td>Another view on structure factors
CIBB seminar room 2nd floor
Wim Burmeister</td><td>Interface with AI predictions (Alphafold2)
CIBB seminar room 2nd floor
Max Nanao</td></tr>
<tr><td rowspan="2">Friday,
13.3.2025</td><td>Beamline practical
ESRF ID30B
Andrew McCarthy & N. N.
(group 1)</td><td>Beamline practical
ESRF ID30B
Andrew McCarthy & N. N.
(group 2)</td><td>Beamline practical
ESRF ID30B
Andrew McCarthy & N. N.
(group 3)</td><td>Beamline practical
ESRF ID30B
Andrew McCarthy & N. N.
(group 4)</td></tr>
<tr><td>Practical Molecular replacement
E. Kowalinski, W. Burmeister
(group 3+4)</td><td>Practical Refinement and validation
E. Kowalinski, W. Burmeister
(group 3+4)</td><td>Practical Molecular replacement
E. Kowalinski, N. Tarbouriech
(group 1+2)</td><td>Practical Refinement and validation
E. Kowalinski, N. Tarbouriech
(group 1+2)</td></tr>
</table>

Capacity: **20 students**

Please contact me directly for registration (do not go through the ADUM platform):

Wim Burmeister wim.burmeister@ibs.fr

Please provide the following information:

- Your status (Post-doc, engineer, Master Student, staff scientist, …) or the year of your doctoral studies (1th, 2nd , 3rd etc.)
- Institute, group and name of your supervisor

For questions about site entry, please contact

Elena Slanickova elena.slanickova@ibs.fr, 04 76 20 94 01.