1st Week, Online Lectures

MONDAY, 31st March (Welcome, Overview, Light, Interaction of X-rays with Matter, Special Invited Lecture)	
09.00-09.30	**WELCOME AND OVERVIEW** Marcus Bär / Catalina E. Jiménez
09.30-10.00	**Overview presentation on BESSY II** Antje Vollmer
10.00-10.15	**15 min BREAK**
10.15-11.15	**Storage ring-based light sources: Current status and future trends** Andreas Jankowiak
11.15-11.30	**15 min BREAK**
11.30-12.30	**Insertion devices – Undulators for photon production** Edward Rial
12.30-13.30	**1h BREAK**
13.30-14.15	**X-ray optics and beamlines for synchrotron radiation experiments** *Frank Siewert*
14.15-14.30	**15 min BREAK**
14.30-16.00	**Interaction of X-rays with matter – Part I** Alexander Föhlisch
16.00-16.15	**15 min BREAK**
16.15-17.15	***Unlocking Industrial Catalysts: The Power of Synchrotron-Based Techniques*** ***Online Special Invited Lecture:*** *Denzil J. Moodley*
17.15-17.45	**Participant Presentations and Informal Discussion I** (max. 5 min/participant, share about yourself, your research, and why you are attending. Join us for a drink and talk about research opportunities at BESSY II)
TUESDAY, 1st April (Interaction of X-rays with Matter, X-ray absorption / Emission)	
09.00-10.30	**Interaction of X-rays with matter – Part II** Alexander Föhlisch
10.30-10.45	**15 min BREAK**
10.45-11.45	**Introduction to XANES and EXAFS** Ivo Zizak
11.45-12.30	**PTB activities with synchrotron radiation including reflectometry and GIXRF** Michael Krumrey
12.30-13.30	**1h BREAK**
13.30-14.00	**Molecular Electronic Structure from RIXS: Experimental Perspectives** Annette Pietzsch
14.00-14.30	**Molecular Electronic Structure from RIXS: Theoretical Perspectives** Vinícius Vaz da Cruz
14.30-14.45	**15 min BREAK**
14.45-15.30	**Theoretical Core-level Spectroscopy with Techniques from Artificial Intelligence** Annika Bande
15.30-15.45	**15 min BREAK**
15.45-16:45	**In-situ and operando X-ray Absorption Spectroscopy** Janis Timoshenko
16.45-17.45	**Participant Presentations and Informal Discussion II** (max. 5 min/participant)

WEDNESDAY, 2nd April (Photoemission & Magnetic Spectroscopy)	
09.00-10.30	**Photoemission: Quantification, depth-"profiling", and energy level alignment** Marcus Bär
10.30-10.45	**15 min BREAK**
10.45-11.30	**Photoemission for studying inorganic and organic electronic materials** Norbert Koch
11.30-11.45	**15 min BREAK**
11.45-12.30	**Operando soft X-ray spectroscopy experiments for heterogeneous catalytic reactions** Axel Knop-Gericke
12.30-13.30	**1h BREAK**
13.30-14.15	**In-situ XPS studies of surface reactions** Christian Papp
14.15-14.30	**15 min BREAK**
14.30-15.30	**Angle-resolved photoemission for the investigation of topological matter** Oliver Rader
15.30-15.45	**15 min BREAK**
15.45-16.30	**RESPES** Christoph Janowitz
16.30-16.45	**15 min BREAK**
16.45-17.30	**Magnetic spectroscopy and scattering** Christian Schüßler-Langeheine
17.30-18.15	**Novel measurement opportunities at coherent x-ray sources** Jan Lüning

THURSDAY, 3rd April (Microscopy & Materials)	
09.00-09.45	**PEEM: Magnetic imaging and spectroscopy at the nanoscale** Florian Kronast
09.45-10.30	**Scanning transmission X-ray microscopy** Markus Weigand
10.30-10.45	**15 min BREAK**
10.45-11.30	**Introduction, Advances and Applications of Infrared Synchrotron Radiation in Micro-spectroscopy** Ljiljana Puskar
11.30-12.15	**X-ray Microscopy** **Christoph Pratsch**
12.15-13.15	**1h BREAK**
13.15-13.45	**X-ray Tomography** Alexander Rack
13.45-14.15	**X-Ray Radioscopy and Tomoscopy** Francisco García-Moreno / Paul-H. Kamm
14.15-14.30	**15 min BREAK**
14.30-15.15	**Operando X-ray tomography, multiscale approaches** Ralf Ziesche
15.15-15.30	**15 min BREAK**
15.30-16.30	**Energy Materials Research with X-rays** Marcus Bär
16.30-17.30	**Participant Presentations and Informal Discussion III** (max. 5 min /participant)

FRIDAY, 4th April (Structure and Wrap-Up)	
09.00-10.30	**Fundamentals of Diffraction and Crystallography** Susan Schorr
10.30-10.45	**15 min BREAK**
10.45-11.30	**Anomalous X-ray Diffraction and its Use in the Analysis of Atomic Structures** Daniel Többens
11.30-12.30	**Macromolecular structure determination by synchrotron X-ray crystallography** Manfred Weiss
12.30-13.30	**1h BREAK**
13.30-14.15	**In-situ X-ray Diffraction** Roland Mainz
14.15-15.00	**Introduction to Small Angle X-ray Scattering (SAXS) and Anomalous SAXS** Armin Hoell
15.00-15.15	**15 min BREAK**
15.15-16.00	**Workshop on how to prepare good beamtime proposals** Astrid Brandt
16.00-16.15	**15 min BREAK**
16.15-17.30	**Participant Presentations and Informal Discussion IV** (max. 5 min/participant)
17.30-17.45	**First Week Wrap-Up and Feedback**

2nd Week: On-Site Welcome (Limited Places)

FRIDAY, 11th April (On-Site Special Lecture and Welcome)	
17.00-18.00	**How to detect electrons from solutions - Liquid-jet photoelectron spectroscopy** Robert Seidel
18.00-19.30	**Buffet Reception and Get-Together**

3rd Week: On-Site Practical Trainings (Limited Places)

MONDAY, 14th April	
09.00-10.30	**Goals of trainings- Workshop on how to prepare poster** Catalina E. Jiménez
10.30-10.45	**15 min BREAK**
10.45-12.00	**BESSY II Tours** Catalina E. Jiménez, Alevtina Smekhova
12.00-13.00	**1h LUNCH BREAK**
13.00-18.00	**Training – Day 1** Meet your trainer in a small group of two or three people and begin the activity.
TUESDAY, 15th April	
09.00-18.00	**Training – Day 2** Full dedication to your training.
12.00-13.00	**1h LUNCH BREAK**

WEDNESDAY, 16th April	
09.00-18.00	**Training – Day 3** Complete the discussion of results and their interpretation. Prepare and submit your poster.
12.00-13.00	**1h LUNCH BREAK**

THURSDAY, 17th April	
09.00-12.00	**Rehearsal for Poster Competition** All
12.00-13.00	**1h LUNCH BREAK**
13.00-15.00	**Poster competition** All
15.00-15.30	**Closing Remarks, Certificate Distribution & Farewell** Catalina E. Jiménez, Marcus Bär, Alejandra Ramirez Caro