

## PhD Programme General and specific skills courses 2021

Course	Description	Duration and credits	Responsible and contacts	Dates
<b>Writing and publishing a scientific paper</b>	NIH-based, practical course to learn and apply a structured method to write scientific papers, which consists in crafting the manuscript through a supervised peer-to-peer work over 6 weeks.	6 days (6x 2h) 1.5 ECTS	USI Prof. Emiliano Albanese emiliano.albanese@usi.ch  registration: phd.biomed@usi.ch	Autumn 2021 TBD (as soon as the min. number of participants is reached)
<b>GMP</b>	Good Manufacturing Practices (GMP) for cell-based medicinal products	1 day 1 ECTS	GMP-CCT Dr. Radrizzani Marina marina.radrizzani@cardiocentro.org SSPH+	Autumn 2021 TBD
<b>SSPH+ Summer School – lecture series</b>	Online lectures on public health questions	3 days 1 ECTS	Information and registration: <a href="http://www.ssph-lugano-summerschool.ch/2020-programme/">http://www.ssph-lugano-summerschool.ch/2020-programme/</a>	Summer 2021
<b>GCP Primo livello</b>	Part 1 and 2	2 days 1 ECTS	CTU-EOC Laura Di Petto Laura.DiPetto@eoc.ch	13.04.2021 20.04.2021 (EN) 11.10.2021 18.10.2021 (IT)
<b>Bioinformatics</b>	Data mining algorithms and classification methods; structural bioinformatics	2 half days 1.5 ECTS	USI Prof. Vittorio Limongelli vittorio.limongelli@usi.ch  registration ( <b>till 31.03.2021</b> ): phd.biomed@usi.ch	May 2021 TBD (as soon as the min. number of participants is reached)
<b>GCP Secondo livello</b>	Certificato GCP 1° Livello per Investigatore necessario	1 day 0.5 ECTS	CTU-EOC Laura Di Petto Laura.DiPetto@eoc.ch	04.05.2021 (EN) 17.11.2021 (IT)
<b>Biostatistics (Part 1 and 2)</b>	I principi di base della statistica applicata alle scienze biologiche e alla medicina. Relatore: Dr. Valter Torri, Responsabile Lab. Metodologia per la Ricerca Clinica, Mario Negri Milano.	2 half days 0.5 ECTS	CTU-EOC Laura Di Petto Laura.DiPetto@eoc.ch	31.05.2021 07.06.2021 (EN) 29.11.2021 06.12.2021 (IT)

<b>Planning and conducting Clinical Research</b>	Planning and conducting Clinical Research	2 days 1 ECTS	CTU-EOC Laura Di Petto Laura.DiPetto@eoc.ch	10.05.2021 17.05.2021 OR 21.10.2021 28.10.2021
<b>Ethical issues</b>	Ethical issues in Biomedical Research	1 day 0.5 ECTS	CTU-EOC Laura Di Petto Laura.DiPetto@eoc.ch	25.05.2021 (EN) 04.10.2021 (IT)
<b>Research policy and grant proposal writing</b>	Course to introduce students to the research policy and funding landscape and to provide them with the competences needed for academic careers	8 days (8x 3h) 3 ECTS	USI Prof. Benedetto Lepori registration open from 1st December to 25th January: <a href="http://www.phdscription.lu.usi.ch">www.phdscription.lu.usi.ch</a> (support: <a href="mailto:stefano.giacomelli@usi.ch">stefano.giacomelli@usi.ch</a> )	01.02.2021 08.02.2021 15.02.2021 22.02.2021 01.03.2021 12.04.2021  (From 13.00 to 16.00)
<b>IRB internal lectures</b>	Brian Edelson, Washington University St. Louis  Ronald Vale, HHMI's Janelia Research Campus  Andrea Ablasser, Swiss Federal Institute of Technology Lausanne (EPFL)  Guido Silvestri, Emory University  Steve West, Francis Crick Institute University of Cambridge	10 per year 1 ECTS	IRB Detailed programme: <a href="http://www.irb.usi.ch">www.irb.usi.ch</a>	14.01.2021 11.02.2021 04.03.2021 22.04.2021 26.05.2021
<b>Microscopy applications for immunological research</b>	Physics light; practical instruction on microscopes; Fluorescence Microscopy Application; practical measurements with confocal and wide field microscopes; digital images, image analysis with ImageJ / Cell profiler; IHC; multi-photon microscopy	2 days 1.5 ECTS	IRB Prof. Marcus Thelen <a href="mailto:marcus.thelen@irb.usi.ch">marcus.thelen@irb.usi.ch</a>	Dates TBD
<b>Introduction to mass spectrometry-based proteomics</b>	Basic principles of mass spectrometry and data analysis will be discussed as well as several applications of proteomics in biomedical research.	4 hours 0.25 ECTS	Prof. Roger Geiger, Dr. Matteo Pecoraro <a href="mailto:matteo.pecoraro@irb.usi.ch">matteo.pecoraro@irb.usi.ch</a>	29.10.2021 (13.30- 17.30)
<b>IOR internal lectures</b>	Johann De Bono, Royal Marsden NHS Foundation Trust  Bertrand Nadel, Marseille Immunopôle  Robert Bristow, Manchester Cancer Research Centre  Alberto Bardelli, Università di Torino  Francesca Demichelis, Università di Trento  William Sellers, Broad Institute of MIT and Harvard  Charles Swanton, The Francis Crick Institute, London	10 per year 1 ECTS	IOR Detailed programme: <a href="http://www.ior.iosi.ch">www.ior.iosi.ch</a>	15.01.2021 12.02.2021 26.03.2021 15.04.2021 28.05.2021 11.06.2021 16.07.2021

<p><b>Basic and Advanced Flow Cytometry</b></p>	<p>The course aims to give basic functional aspects of flow cytometer, and advanced learnings regarding study panel design, data analyses and flow cytometry data presentation. The course will discuss the following topics: Basic functional aspects of a flow cytometry, Morphological Parameters, Fluorescence and Fluorophores, False positive events (dead cell exclusion and doublets discrimination), Negative controls, Cell Staining Procedures for immunophenotyping, Signal Amplification, Machine Set Up, Reagents titration, Theory of fluorescence compensation and related procedures, Data analysis, Flow cytometry data presentation, Study design</p>	<p>4 hours 0.25 ECTS</p>	<p>IOR Dr. Arianna Calcinotto Dr. Angela Elia  registration: phd.biomed@usi.ch</p>	<p>21.09.2021 (13.30-17.30)</p>
<p><b>Practical aspects of Next Generation Sequencing and its applications</b></p>	<p>This course will introduce students to NGS techniques on practical point of view. We will discuss the use of NGS from research area (presenting the different approaches that were developed) to clinical practice (disease diagnosis, prognosis, therapeutic decision and follow up of patients).</p>	<p>6 hours (4x90min) 0.5 ECTS</p>	<p>IOR Dr. Andrea Rinaldi Prof. Davide Rossi  andrea.rinaldi@ior.usi.ch</p>	<p>September - October 2021</p>
<p><b>Seminars in Biomedical Neurosciences</b></p>	<p>Neural correlates of social exclusion  Miniaturized 3D culture systems for the study of musculoskeletal diseases  Therapeutic Drug Monitoring of Newer Antiepileptic Drugs  Serum neurofilament levels: a biomarker of neurodegeneration and treatment response in multiple sclerosis  Immune memory to neurotropic infections</p>	<p>10 per year  1 ECTS</p>	<p>Neurocentro salvatore.galati@eoc.ch  Detailed programme : <a href="https://content.usi.ch/sites/default/files/storage/attachments/biomed/biomed-usi_int_phd_program_sem_biom_neurosciences_nsi_06.2021.pdf">https://content.usi.ch/sites/default/files/storage/attachments/biomed/biomed-usi_int_phd_program_sem_biom_neurosciences_nsi_06.2021.pdf</a></p>	<p>20.01.2021 03.02.2021 24.03.2021 21.04.2021 19.05.2021  <b>Via Zoom</b>  Next dates available soon</p>
<p><b>Cardiocentro internal lectures</b></p>	<p>internal lecture seminars / courses / conferences</p>	<p>10 per year  1 ECTS</p>	<p>Cardiocentro lucio.barile@cardiocentro.org</p>	<p>Dates TBD</p>
<p><b>BENEFRI workshops</b></p>	<p>The BENEFRI Neuroscience Program organises yearly block courses (BENEFRI Neuroscience Workshops) and oral examinations in structural and functional neuroscience. The workshops last for 3 days in February and cover various aspects of the neurosciences.</p>	<p>3 days 1,5 ECTS</p>	<p>University of Bern and Fribourg katrin.huber@unifr.ch</p>	<p>February 2021</p>
<p><b>Extracellular vesicles and intercellular communication</b></p>	<p>Introduction in cell-to-cell communication mediated by extracellular vesicles. The course will cover the principles of their biogenesis, cell targeting, uptake, and cargo release required for functional paracrine activity.</p>	<p>3 hours (2x 90 min)  0.25 ECTS</p>	<p>Cardiocentro Carolina Balbi, Giona Pedrolì  registration: carolina.balbi@cardiocentro.org</p>	<p>24.03.2021 25.03.2021  From 13.30 to 15.30  <b>Online</b></p>
<p><b>Ion channels and Channelopathies</b></p>	<p>Ion channels background: structure-function relationship. The aim of the course is to focus on the physiological contribution of transmembrane ion channels with the particular attention to their role in the main pathological conditions.</p>	<p>3 hours (3x 60 mn)  0.25 ECTS</p>	<p>Cardiocentro Claudia Altomare registration: claudia.altomare@cardiocentro.org</p>	<p>27.04.2021 28.04.2021</p>

<b>Pharmaceutical Chemistry</b>	Introduction to drug/target interaction. Understanding and rationalization of drug mechanism of action. Case study on anti-inflammatory drugs.	2 days 1.5 ECTS	USI Prof. Vittorio Limongelli registration (till 31.03.2021): phd.biomed@usi.ch	May 2021 TBD (as soon as the min. number of participants is reached)
<b>Drug design</b>	Principles of pharmacokinetics and pharmacodynamics. Successful examples of drug discovery, from design to clinic.	2 days 1.5 ECTS	USI Prof. Vittorio Limongelli registration (till 31.03.2021): phd.biomed@usi.ch	May 2021 TBD (as soon as the min. number of participants is reached)
<b>Molecular Biology Methods</b>	This course is intended to provide a general overview, as well as deep insights into different molecular biology methods for gene and protein expression profiling, analysis of promoter regulation and gene silencing (including real-time quantitative PCR, Chromatin immunoprecipitation, Western blot, High throughput screening, etc.). The course will cover experimental design, different methodology approaches, method limitations, troubleshooting, protocols reagents and kits, and presentation of results. Real life case scenarios and practical issues will be also discussed.	2 days 1 ECTS	ETH Prof. Pedro Ruiz andrea.schmitz@uzh.ch  <a href="https://www.phd-biomed.uzh.ch/en/BioMed_Training/BioMed_courses.html">https://www.phd-biomed.uzh.ch/en/BioMed_Training/BioMed_courses.html</a>	06.09.2021 07.09.2021
<b>Bioinformatics and Next Generation Sequencing</b>	Within this course you will learn important bioinformatic concepts and tools and in particular focus on the analysis of Next Generation Sequencing datasets with many examples and exercises. Basic bioinformatics knowledge is recommended. <b>Via Zoom.</b>	6 days 3 ECTS	ETH Prof. Ferdinand von Meyenn andrea.schmitz@uzh.ch  <a href="https://www.phd-biomed.uzh.ch/en/BioMed_Training/BioMed_courses.html">https://www.phd-biomed.uzh.ch/en/BioMed_Training/BioMed_courses.html</a>	Dates TBD
<b>Sensory systems: How we hear and see</b>	In the morning, you will receive a theoretical overview about the function of the visual and auditory system. In the afternoon, you will perform experiments to learn more about the abilities of the human eye and ear.	2 days 1 ECTS	ETH Prof. Christian Grimm and Flurin Pfiffner andrea.schmitz@uzh.ch registration: by email, before 4 January 2021  <a href="https://www.phd-biomed.uzh.ch/en/BioMed_Training/BioMed_courses.html">https://www.phd-biomed.uzh.ch/en/BioMed_Training/BioMed_courses.html</a>	01.02.2021 02.02.2021 Via Zoom  Next edition: end of 2022
<b>Membrane transport / signal transduction</b>		2 days 1 ECTS	ETH andrea.schmitz@uzh.ch  <a href="https://www.phd-biomed.uzh.ch/en/BioMed_Training/BioMed_courses.html">https://www.phd-biomed.uzh.ch/en/BioMed_Training/BioMed_courses.html</a>	September 2021
<b>Regulation of cardiovascular function</b>	In the morning, you will receive a theoretical overview of cardiovascular physiology, focusing on the context that will help you to better understand your practical experiments. In the afternoon,	2 days 1 ECTS	ETH PD Dr. Elena Osto and Prof. Dr. Isabella Serano andrea.schmitz@uzh.ch	15.09.2021 16.09.2021

	you will perform the following practical work: Measuring blood pressure, pulse wave and blood flow velocity as well as recording an electrocardiogram (EKG). Furthermore, we will perform a real-time echocardiography (heart ultrasound) demonstration for you.		registration: by email, before 2 August 2021  <a href="https://www.phd-biomed.uzh.ch/en/BioMed_Training/BioMed_courses.html">https://www.phd-biomed.uzh.ch/en/BioMed_Training/BioMed_courses.html</a>	
<b>Respiration and blood</b>		2 days 1 ECTS	ETH Prof. Carsten Scholz andrea.schmitz@uzh.ch  <a href="https://www.phd-biomed.uzh.ch/en/BioMed_Training/BioMed_courses.html">https://www.phd-biomed.uzh.ch/en/BioMed_Training/BioMed_courses.html</a>	Winter 2021-2022
<b>Mouse physiology and pathophysiology</b>	Introduction to techniques such as animal husbandry, rodent diets, pain management, and imaging techniques as well as disease models. Discussion about resources and reagents available in Zürich.	2 days 1 ECTS	ETH Lubor Borsig / Petra Seebeck andrea.schmitz@uzh.ch  <a href="https://www.phd-biomed.uzh.ch/en/BioMed_Training/BioMed_courses.html">https://www.phd-biomed.uzh.ch/en/BioMed_Training/BioMed_courses.html</a>	17.06.2021 18.06.2021

**Notes**

- The decision to include a course into the “general skills” or “specific skills” depends on the single doctoral programme and is made in accordance with the Thesis Director. “Specific skills” courses are the ones that are essential to the PhD project (as can be immunology to IRB students or neurology to NSI students, for instance), while “general skills” courses may be common to different PhD programmes (grant writing, biostatistics, etc.).
- For registration please directly contact the organiser of the course, unless otherwise specified.
- You will be informed by email of major changes and the programme will be regularly updated.
- Courses take place only when a minimum number of participants is reached.