INSTITUTE OF BIOCHEMISTRY AND BIOPHYSICS
POLISH ACADEMY OF SCIENCES

Courses for PhD students

The academic year 2025 / 2026

Warsaw, June 2025

AUTUMN 2025

MONDAYS

MEDICAL CHEMISTRY
October 6th, 2025 - February 16th, 2026
15 meetings
language: English

WEDNESDAYS

IMAGE ANALYSIS COURSE USING IMAGEJ/FIJI SOFTWARE
optional workshop
October/November 2025
(exact schedule will be announced in September)
5 meetings
language: English

FRIDAYS

HOW TO BUILD A GRANT PROPOSAL
October 3rd - 31st 2025
4 meetings
language: English

SCIENTIFIC WRITING
November 7th, 2025 - January 16th, 2026
two groups,
4 meetings each
language: English

ETHICS IN RESEARCH
February 6th – 27th, 2026
4 meetings
language: English

SPRING 2026

MONDAYS

RNA
March 2nd – June 22nd, 2026
15 meetings
language: English

FRIDAYS

BIOSTATISTICS
March 6th – May 22nd, 2026
10 meetings
language: English

DESIGN THINKING
optional workshop
May 29th - June 26th, 2026
4 meetings
language: English

LECTURE	**MEDICAL CHEMISTRY**
structure	series of 15 meetings (2 x 45 min each)
schedule	Mondays 09:30 am October 6th, 2025 - February 16th, 2026
language	English
room	Lecture hall E or on-line, depending on the speaker
requirements	use your full name while logging in
software	-
ASSESSMENT	
credit	• written exam (for PhD Students in chemical sciences) + min. 60% of attendance; or • a short (400-500 words) essay on a given topic + min. 60% of attendance (for PhD Students in biological sciences)
language	English
date	February 16th, 2026
room	Lecture hall E
educational materials	-
LECTURERS	full list will be available later
CONTACT PERSON	Adam Mieczkowski, PhD, DSc (amiecz@ibb.waw.pl)
COORDINATORS	Anna Muszewska, PhD, DSc (musze@ibb.waw.pl) Adrian Iwaniuk (sbm@ibb.waw.pl)

The course includes:

The lecture concerns modern issues, directions and strategies in the field of medicinal chemistry and presents current chemical and biochemical tools applied in drug discovery. The lecture will be focused on the development of novel therapeutic agents based on nucleoside analogues, metal-based drugs, radiopharmaceuticals, peptide nucleic acids, therapeutic nucleic acids (mRNA, antisense, siRNA, Crispr/Cas, ribozymes, DNA and RNA oligonucleotides) boron-based drugs, peptide and peptidemimetics used as antitumor, antiviral and/or antibacterial agents and also include issues related to drug polymorphism, activity/affinity-based protein profiling in drug discovery and PROTACs as promising new strategy for anticancer therapy.

LECTURE	**IMAGE ANALYSIS COURSE USING IMAGEJ/FIJI SOFTWARE** **optional workshop - This course is not part of the educational programme. You may participate in it to enhance your knowledge and skills.**
structure	series of 5 meetings (2 x 45 min each)
schedule	Wednesdays **(To be announced)**
language	English
room	Online course
requirements	
software	-
ASSESSMENT	
credit	**(To be announced)**
language	English
educational materials	-
LECTURERS	
CONTACT PERSON	Anna Anielska-Mazur, PhD (aam@ibb.waw.pl)
COORDINATORS	Adrian Iwaniuk (sbm@ibb.waw.pl) Anna Muszewska, PhD (musze@ibb.waw.pl)

The course includes:

(To be announced)

LECTURE	**HOW TO BUILD A GRANT PROPOSAL**
structure	series of 4 meetings (2 x 45 min each)
schedule	Fridays 09:30 am October 3rd - 31st, 2025
language	English
room	Room 7 / A
requirements	-
software	-
ASSESSMENT	
credit	attendance (min. 60%) + written assignment
language	English
room	Room 7 / A
educational materials	-
LECTURERS	Szymon Świeżewski, PhD, DSc
CONTACT PERSON	Szymon Świeżewski, PhD, DSc (sswiez@ibb.waw.pl)
COORDINATORS	Anna Muszewska, PhD, DSc (musze@ibb.waw.pl) Adrian Iwaniuk (sbm@ibb.waw.pl)

The course includes:

- Selecting a proper call.
- Identifying your strengths.
- How to choose the subject of the grant proposal.
- Balancing novelty and feasibility.
- Art of writing a grant proposal.
- Common mistakes in grant proposals.

LECTURE	**SCIENTIFIC WRITING**
structure	series of 4 meetings (2 x 45 min each) two groups
schedule	Fridays 09:30 am November 7th, 2025 - January 16th, 2026
language	English
room	Room 7 / A
requirements	-
software	-
ASSESSMENT	
credit	attendance (min. 60%) + 1 assignment
language	English
room	Room 7 / A
educational materials	-
LECTURERS	Marta Hoffman, PhD (martah@ibb.waw.pl)
CONTACT PERSON	Anna Muszewska, PhD, DSc (musze@ibb.waw.pl)
COORDINATORS	Adrian Iwaniuk (sbm@ibb.waw.pl)

The course will discuss the topics:

- Why do we write research articles?
- A research paper as a narrative
- Different audiences, different approaches
- Methods section versus experimental protocol – finding the balance
- Presenting data in a paper:

  figures / supplementary figures / figure source data / underlying datasets
- Shortening down: thesis – paper – presentation – poster – abstract – title

The course will include 2 short exercises (about the size of an abstract).

LECTURE	**ETHICS IN RESEARCH**
structure	series of 4 meetings (2 x 45 min each)
schedule	Fridays 09:30 am February 6th – 27th, 2026
language	English
room	on-line
requirements	use your full name while logging in
software	-
ASSESSMENT	
credit	attendance (min. 60%) + written assessment
language	English
room	on-line or in person (Room 3/D)
educational materials	-
LECTURERS	• Bartłomiej Tomasik, PhD physician and biostatistician • Wojciech Bober, PhD in Phylosophy • Zuzanna Warso, PhD, Director of Research at the Open Future Foundation • Błażej Dawidson, supports organizations in improving services and customer experience
CONTACT PERSON	Anna Muszewska, PhD, DSc (musze@ibb.waw.pl)
COORDINATORS	Adrian Iwaniuk (sbm@ibb.waw.pl)

The course includes:

- Data integrity and data manipulation
- The role of society and communication
- Ethics in the philosophical context
- Legal frames of research and RRI

LECTURE	**RNA**
structure	series of 15 meetings (2 x 45 min each)
schedule	Mondays 09:30 am March 2nd – June 22nd, 2026
language	English
room	Lecture hall E or on-line, depending on the speaker
requirements	-
software	-
ASSESSMENT	
credit	• written exam (for PhD Students in biological sciences) + min. 60% of attendance; or • a short (400-500 words) essay on a given topic + min. 60% of attendance (for PhD Students in chemical sciences)
language	English
date	June 22th, 2026
room	Lecture hall E
educational materials	-
LECTURERS	full list will be available later
CONTACT PERSON	Piotr Gerlach, PhD (p.gerlach@imol.institute), Maciej Cieśla, PhD, DSc (m.ciesla@imol.institute)
COORDINATORS	Anna Muszewska, PhD, DSc (musze@ibb.waw.pl) Adrian Iwaniuk (sbm@ibb.waw.pl)

The course includes:

During the course, participants will explore various facets of RNA function and regulation. The course aims to provide a comprehensive overview of RNA metabolism, offering both foundational knowledge and insights into emerging frontiers in the field. Topics will range from mechanistic aspects to translational applications, covering a broad spectrum of RNA-related processes. Specifically, the course will include discussions on: transcription and RNA polymerases; co-transcriptional processing and export of mRNA; splicing; ribosome biogenesis and function; translation initiation and regulation; epitranscriptomics and RNA modifications; RNA processing and decay; RNA granules; regulatory RNAs; RNA viruses; and therapeutic RNAs.

LECTURE	**BIOSTATISTICS**
structure	series of 10 meetings (2 x 45 min each)
schedule	Fridays 09:30 am March 6th – May 22nd, 2026
language	English
room	on-line,
requirements	use your full name while logging in
software	-
ASSESSMENT	
credit	attendance (min. 60%) + 1 assignment
language	English
educational materials	-
LECTURERS	Michał Aleksander Ciach, PhD
CONTACT PERSON	Anna Muszewska, PhD, DSc (musze@ibb.waw.pl) Adrian Iwaniuk (sbm@ibb.waw.pl)

The course includes:

The course will focus on the fundamentals of statistics with a focus on applications in biological research.
Introduction to data analysis and basic data exploration techniques - clustering and principal component analysis
The interpretation of probability and randomness - what "random" means for a statistician
The basics of probability theory - how randomness is modeled mathematically
Application of probability theory to estimation - how to handle uncertainty
Common statistics - the mean, the median, the mode
Confidence intervals - a better way of handling uncertainty
Statistical hypothesis testing - how to gain knowledge from statistics
Odds Ratio - how can we trust if a drug is effective
Linear regression - how the dose influences the outcome
ANOVA - how to check if there is any difference at all between multiple groups
After completion of the course, the students will be able to perform basic statistical analyses using some of the most common statistical techniques used in biological and biomedical research.

LECTURE	**DESIGN THINKING** **optional workshop - This course is not part of the educational programme. You may participate in it to enhance your knowledge and skills.**
structure	series of 4 meetings (2 x 45 min each)
schedule	Fridays 09:30 am May 29th - June 26th, 2026
language	English
room	Room 7/A
requirements	-
software	-
ASSESSMENT	
credit	attendance (min. 60%) + practical assessment
language	English
educational materials	-
LECTURERS	Katerina Makarova, PhD, Eng. (kmakarova@ibb.waw.pl)
CONTACT PERSON	Anna Muszewska, PhD, DSc (musze@ibb.waw.pl) Adrian Iwaniuk (sbm@ibb.waw.pl)

The course includes:

This course introduces scientists to the Design Thinking methodology, focusing on innovation and problem-solving. Participants will explore the stages of Design Thinking—Empathy, Redefine, Ideate, Prototype, and Test—through practical tools like empathy maps, brainstorming, and rapid prototyping. Hands-on sessions include problem redefinition methods, teamwork strategies, and prototype testing. The course culminates in team-based projects addressing real-world challenges, where students design, prototype, and present innovative solutions. Tailored for researchers, this program fosters creative thinking and equips participants with actionable skills to tackle scientific and industrial problems effectively.