

Konstanz Research
School Chemical Biology

**Course
Programme
2015**





How many courses do I have to take?

Four courses in total are compulsory. Of these courses, two have to cover “Scientific courses”, one has to cover “Transferable skills/Management courses”, and one is free of choice.

Areas

SC – Scientific courses

TM – Transferable skills/Management courses

Which courses shall I take?

This depends on your educational background and your research interests and should be discussed with your Thesis committee.

How to register?

Please enrol by using the link at the end of each course description on the website.

– chembiol.uni-konstanz.de/scientific-courses.html

– chembiol.uni-konstanz.de/transferable-skills.html

Date	Title	Page	Area
1 Feb – 30 Apr	MATLAB (Online)	6	SC
9 Feb	Gene Expression and Protein Purification Strategies	7	SC
5 – 6 Mar	Ethics in Science	8	TM
9 – 10 Mar	Data Visualisation	9	TM
12 – 13 Mar	Presenting Skills	10	TM
17 – 18 Mar	Leadership for Future Leaders	11	TM
19 – 20 Mar	Career Orientation and Application Training	12	TM
24 – 26 Mar	How to publish in peer-reviewed journals	13	TM
6 – 7 July	Good Scientific Practice	14	TM
8 – 9 July	Good Scientific Practice	14	TM
14 – 15 July	Information Literacy	15	SC
15 July – 14 Oct	MATLAB (Online)	6	SC
16 – 17 July	Practical Screening Data Analysis	16	SC
20 – 22 July	Bioimaging	17	SC
5 Aug	The Power of Cutting Edge Mouse Genetics	18	SC
28 – 30 Sep	Proteomics	19	SC
15 – 16 Oct	Determination of Macromolecular Structures	22	SC
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MATLAB

1 February – 30 April and
15 July – 14 October 2015
Online

MATLAB is a high-level language and interactive environment for numerical computation, visualisation, and programming. Using MATLAB, you can analyse data, develop algorithms, and create models and applications. The “self-paced” online courses are available for 90 days and cover the topics to the same extent than an on-site training.

3 (self-paced training) courses are available:

- Basics
- Programming
- Data Processing and Visualisation

Course Area

Scientific course

(Please note that there will be no course confirmation and, therefore, the online courses cannot be considered as equal to the graduate school's training programme.)

Software Download

– rz.uni-konstanz.de

Registration

– chembiol.uni-konstanz.de/scientific-courses.html

Gene Expression and Protein Purification Strategies

9 February 2015, 11:45 – 16:45 h
ML 630

This one day course will treat the following topics within two half-day sessions of each lecturer:

- Introduction into recombinant gene expression
- Diverse expression systems
(Bacteria, yeast, Baculo virus)
- Cloning strategies
- Tagging and affinity purification of recombinant proteins

Lecturer

Elke Deuerling, Thomas Mayer

Course Area

Scientific course

Participants

max. 24

Registration

– chembiol.uni-konstanz.de/scientific-courses.html



Ethics in Science

5 – 6 March 2015, 9:00 – 16:00 h

E 403

Why is ethics important in science? This two day seminar is intended to assist PhD students in developing a better understanding of the essential role of ethical behaviour in the practice of scientific research; to provide a set of criteria for assessing ethical dilemmas; to facilitate a room for free discussion on cases of scientific misconduct (fabrication and falsification of data, image manipulation, plagiarism, conflicts of interest, authorship issues, etc.), and to offer an overview of existing guidelines. Participants in the seminar are expected to give short presentations about a case or a topic of scientific misconduct.

Lecturer

Roberto Andorno

Course Area

Transferable skills

Participants

max. 18

Registration

– chembiol.uni-konstanz.de/transferable-skills.html



Data Visualisation

9 – 10 March 2015, 9:00 – 17:00 h

Y 311

This two-day workshop enables life scientists to effectively create figures based on quantitative data that add impact to their publications. The workshop is divided into two one-day modules: Principles and Applications. On the first day, the Principles module focuses on understanding the purpose of a figure, choosing the most appropriate plot type, and the science of perception. The first day is primarily concerned with the art of visual communication and integrates participants' own examples into the teaching process. On the second day, the Applications module focuses on the practical implementation of the data visualisation principles discussed on the first day. This is done using the R statistical programming environment with the participants' own data.

Lecturer

Rick Scavetta

Course Area

Transferable skills

Participants

max. 12

Registration

– chembiol.uni-konstanz.de/transferable-skills.html



Presenting Skills

12–13 March 2015, 9:00–17:00 h

Y 311

Every scientist eventually faces the daunting task of presenting their research to an audience, an intimidating prospect for even the most experienced researchers. This two-day workshop empowers life scientists to present with confidence and to manage their fear of public speaking. To accomplish this, the workshop combines short practice talks with lessons in the three main topics – body language, slide construction and story-telling.

Participants learn how to:

- Effectively use body language and visuals to get their message across
- Present scientific results clearly and persuasively as part of a story
- Manage their fear of public speaking
- Design visuals that communicate clear messages
- Deliver a memorable “take-home” message

Lecturer

Rick Scavetta

Course Area

Transferable skills

Participants

max. 10

Registration

– chembiol.uni-konstanz.de/transferable-skills.html



Leadership for Future Leaders

17–18 March 2015, 9:00–17:00 h

F 423

This two day module provides a general insight into actual leadership tools. The theoretical aspects of leadership are combined with case studies. The course helps avoiding typical mistakes in leadership situations and gives you an overview on situations, instruments and personal factors to successfully lead co-workers. Your questions are highly appreciated and will enhance the course. The course is recommended in the second phase of your studies.

Lecturer

Andreas Ploch

Course Area

Management course

Participants

max. 10

Registration

– chembiol.uni-konstanz.de/transferable-skills.html



Career Orientation and Application Training

19 – 20 March 2015, 9:00 – 17:00 h

Y 310

This workshop helps to find the personal motivation for the future career and shows different options, so called career paths. The first step is to find “the right company”, the second step is to get “the right job”. Important questions are: What exactly is my motivation? Where are my strengths and weaknesses? What “plan” do I have for my career?

Following this, the two day job application training helps from the very first steps of an application process: How do I write a “good” application, a “good” CV? What is important in an interview session? What to do in an assessment-centre? Online application tools and questionnaires are also subject of this course.

Lecturer

Andreas Ploch

Course Area

Transferable skills

Participants

max. 10

Registration

– chembiol.uni-konstanz.de/transferable-skills.html



How to publish in peer-reviewed journals

24 – 26 March 2015, 9:00 – 17:00 h

Y 310

This course provides a hands-on approach to writing a paper for an international peer-reviewed journal. It introduces you to all steps involved in successfully preparing, writing, editing, and submitting your paper. In numerous exercises, you draft individual sections of your manuscript, and you are given concrete advice on how to overcome the various hurdles involved in the writing and peer-review process. You receive answers to your individual questions and get clear instructions on how to complete and submit your manuscript after the course. For this course, participants should be in the process of preparing, writing or revising a manuscript to be submitted to an international peer-reviewed journal.

Lecturer

Gunther Tress

Course Area

Management course

Participants

max. 12

Registration

– chembiol.uni-konstanz.de/transferable-skills.html



Good Scientific Practice

6–7 July 2015, 9:00–17:30 h and

8–9 July 2015, 9:00–13:00 h

Room t.b.a.

Ethical principles and values of good scientific practice are important standards in the scientific system. Aims of the course “Good Scientific Practice” are to know and understand the basic rules and values of the responsible conduct of research and to recognize questionable scientific practice and misconduct. The participants are encouraged to speak with colleagues or with ombudspersons about mistakes and problems.

Learn to develop appropriate solutions for difficult situations in the process of science and learn how to act appropriately!

Lecturer

Hans-Peter Eckle

Course Area

Transferable Skills

Participants

max. 16

Registration

– asd.uni-konstanz.de

Information Literacy

14–15 July 2015

Tue 14:00–17:00 h, Wed 10:00–13:00 h

J 213

How to perform research in literature databases? What to consider when formulating the query? How to improve literature research and what options are offered by the library of the University of Konstanz? This course will teach the fundamental concepts and skills.

Lecturer

Monika May

Course Area

Scientific course

Participants

max. 12

Registration

– chembiol.uni-konstanz.de/scientific-courses.html



Practical Screening Data Analysis

16–17 July 2015, 9:00–18:00 h

Z 613

We will introduce KNIME, an open source data analytics framework together with extensions that allow to process screening data, such as activity information or cell assay images. The course consists of lectures with extensive hands-on sessions. After successful attendance participants should be able to use KNIME to process and analyse their own data independently.

Lecturer

Michael Berthold et al.

Course Area

Scientific course

Participants

max. 15

Registration

– chembiol.uni-konstanz.de/scientific-courses.html

Bioimaging

20–22 July 2015, 9:00–18:00 h

Bioimaging Center

This three day course will cover the following themes by lectures, demonstrations, and hands-on:

- Fluorescence Imaging and Deconvolution
- Laser Scan Confocal Microscopy
(Point Scanning and Spinning Disk)
- Total-Internal-Reflection (TIRF) Microscopy

Lecturer

Elisa May

Course Area

Scientific course

Participants

max. 9

Registration

– chembiol.uni-konstanz.de/scientific-courses.html

The Power of Cutting Edge

Mouse Genetics

5 August 2015, 9:00–18:00 h

ML 630

In this course the latest developments in the field of mouse genetics including talen and crispr-cas approaches will be taught. The principles and theory of generating transgenic mice, knock out mice, or kick in mice will be covered, and practical examples from ongoing studies will be presented by internal and external experts. Both constitutive and inducible approaches will be introduced and the power of mouse genetics for monitoring gene expression and visualizing rare population of cells in mice will be outlined.

Lecturer

Jörg Fehling, Marcus Groettrup, Klaus-Peter Knobeloch, Radek Sedlacek

Course Area

Scientific course

Participants

max. 30

Registration

– chembiol.uni-konstanz.de/scientific-courses.html

Proteomics

28 – 30 September 2015, 9:00–17:00 h

ML 630

This three day course comprises morning lectures and hands-on experiences in the afternoon, hereby treating the following topics:

- General intro (proteomics workflow, mass spectrometers, ESI-/MALDI-ionisation, mass analyzers)
- ESI-MS and MALDI-MS practice
- Sample preparation – theory and practice
- LC-MS and fragmentation techniques – theory and practice
- Special applications (SILAC, ICAT, protein quantification)

Lecturer

Andreas Marquardt

Course Area

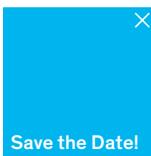
Scientific course

Participants

max. 10

Registration

– chembiol.uni-konstanz.de/scientific-courses.html



Autumn School Chemical Biology

5 – 9 October 2015, University of Konstanz

Part I: Courses (5 – 7 October)

Bioimaging

The course will cover the following themes by lectures, demonstrations, and hands-on:

- Fluorescence Imaging and Deconvolution
- Laser Scan Confocal Microscopy (Point Scanning and Spinning Disk)
- Total-Internal-Reflection (TIRF) Microscopy

Bioconjugation Chemistry

The course will give an overview on current bioconjugation techniques by lectures as well as talks from invited guests.

The following topics will be covered:

- Synthesis and site-specific modification of biomolecules (nucleic acids, peptides/proteins, carbohydrates)
- Immobilization strategies
- Bioorthogonal ligation reactions
- Metabolic labelling

Computational Life Science

The course comprises the following topics, hereby using teaching modules as well as demos and hands-on:

- Sequencing
- Trees and Next Generation Sequencing
- Molecular Structure Analysis and Docking

Combinatorial and High Throughput Technologies

The course will be divided into the following topics which will be taught by the respective lecturers day by day:

- Combinatorial Chemistry
- Nucleic Acids: In-Vitro Selection and Screening Applications
- Directed Protein Evolution
- Combinatorial Chemistry

Part II: Symposium (8 – 9 October)

Konstanz Symposium Chemical Biology

Speakers:

- Benjamin F. Cravatt, The Scripps Research Institute
- Ben Davis, University of Oxford
- Wenshe Liu, Texas A&M University
- Chris Meier, University of Hamburg
- Tom Muir, Princeton University
- Erich Nigg, Biozentrum, University of Basel
- Georg Pohnert, Friedrich Schiller University Jena
- Sheena Radford, University of Leeds
- Petra Schwill, Max-Planck-Institute of Biochemistry
- Stephen Taylor, University of Manchester
- Dirk Trauner, Ludwig-Maximilians-Universität München

– ks-cb.com

Determination of Macromolecular Structures

15–16 October 2015, 9:00–18:00 h

L 601, L 1201

This two day course will provide theoretical and practical information on structure determination of biomacromolecules by X-ray crystallography. The sessions will cover the following topics:

- Diffraction theory
- structure solution methods
- how to judge structural information

Lecturer

Kay Diederichs, Wolfram Welte

Course Area

Scientific course

Participants

max. 15

Registration

– chembiol.uni-konstanz.de/scientific-courses.html



Good Scientific Practice

9–10 November 2015, 9:00–17:00 h

Room t.b.a.

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Lecturer

Michael Gommel

Course Area

Transferable Skills

Participants

max. 16

Registration

– asd.uni-konstanz.de

Further workshops and training are offered by:

Academic Staff Development

– asd.uni-konstanz.de

Career Service

– career-service.uni-konstanz.de

Research Support Office

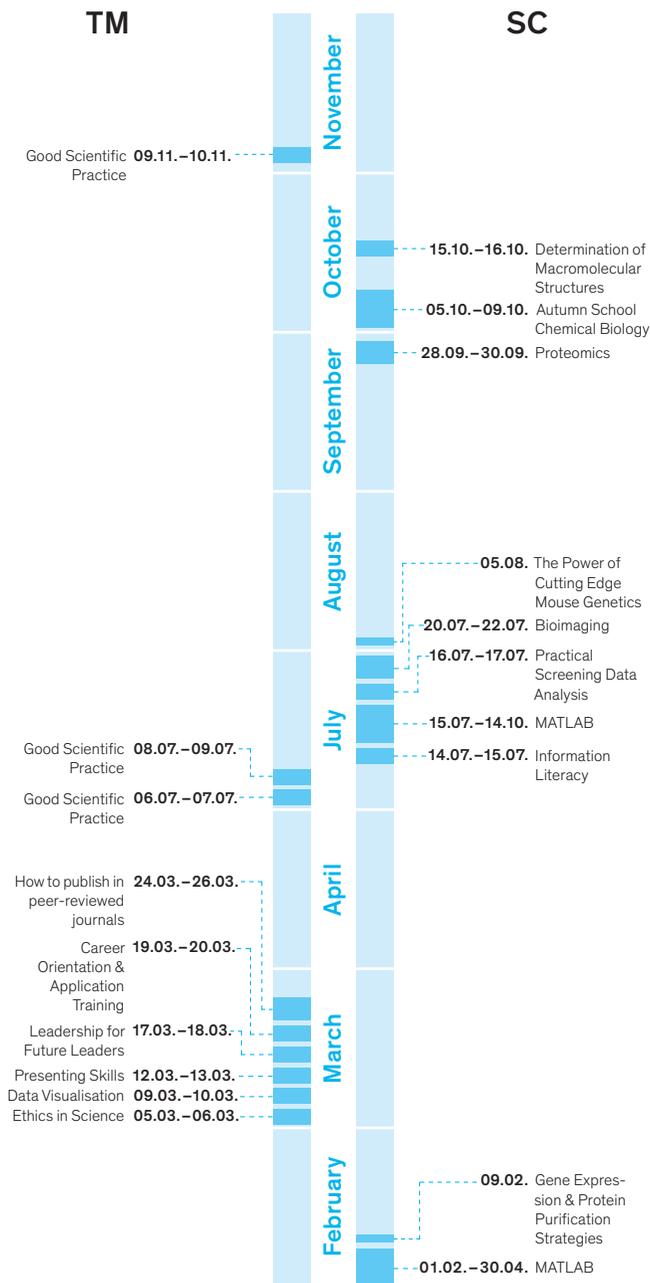
– forschungssupport.uni-konstanz.de

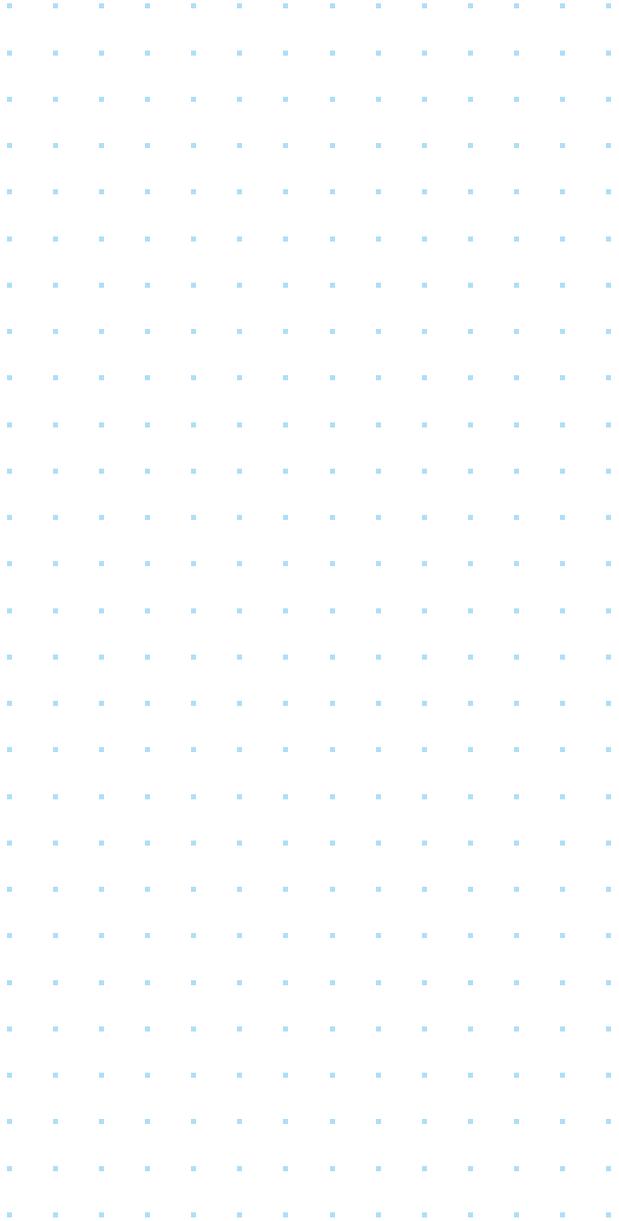
Hochschul Didaktik Zentrum Universitäten
Baden-Württemberg

– hochschuldidaktik.uni-konstanz.de

MuT – Mentoring and Training

– lakog.uni-stuttgart.de





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