


Syllabus



GRIPS-Suche

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Course: Genomik und Bioinformatik I

This lecture belongs to the module CS-B-Gen1 and is part of the curriculum of Computational Science studies at the University of Regensburg. The course is found in the Vorlesungsverzeichnis under the number 57030 and the related exercises are announced under the number 57037. These courses are only offered in the summer semester.

The lecture discusses biological topics as well as topics from biostatistics and bioinformatics. The biological part of the lecture gives an overview on interactions and regulation between genes, proteins, cells and organisms. Thereby, the focus will be given to the understanding of genomic data such as gene sequence and protein structures. Particular issues in the interpretation of such data illustrate the need for methods from bioinformatics and biostatistics. In the first semester, the focus is on discrete statistical models and related algorithms.

The lecture takes place on Wendsdays 10:00 to 12:00 and on Thursdays 8:00 to 10:00 in PHY 9.1.10. The related exercise discussions take place on Wednesdays from 14:00 to 16:00 in DE_1.127. The assisted programming sessions take place on Fridays from 14:00 to 16:00 in CIP PHY Ux.

Organization

Recommended Books

E-books

Forum

Genomics and Bioinformatics

Contacts

Rainer Spang:	rainer.spang@ur.de
Claudio Lottaz:	claudio.lottaz@ur.de
Daniel Grünbaum:	gub.vorlesung@ukr.de
Moritz Jung:	gub.vorlesung@ukr.de

Lectures

Assignments

Tutorial

Programing Support

Register on GRIPS

<https://elearning.uni-regensburg.de/>

→ Medizin

→ Lehrveranstaltungen Computational Science

→ Genomik und Bioinformatik I

or directly via:

<https://elearning.uni-regensburg.de/course/view.php?id=5423>

The screenshot shows the GRIPS e-learning platform interface. At the top, there is a header with the University of Regensburg logo, a search bar labeled 'GRIPS-Suche', and navigation links: 'SUCHEN', 'KONTAKT', 'IMPRESSUM', 'DATENSCHUTZ', and a user icon. Below the header, it says 'You are logged in as Rainer Spang (Log out)'. The main content area is divided into two columns. The left column contains 'QUICKLINKS' (Meine Kurse, Mitteilungen, Logout) and 'ADMINISTRATION' (Course administration, Turn editing on, Edit settings, Users, Filters, Grades, Outcomes, Badges, Backup, Restore, Import, Reset, Question bank, Legacy course files, Switch role to...). The right column displays the 'Course: Genomik und Bioinformatik I' page, which includes a description of the lecture, its schedule, and a list of resources: Organization, Recommended Books, E-books, and Forum.

Forum

Please add a photo to your GRIPS-profile

Lectures

Mon 10:15 - 11:45

DE 1.129

Thu 10:15 - 11:45

DE 1.129

Slides in English

Lectures in German

There is no script

Lectures

You can ask questions at any time.

Before each lecture you should spend a few minutes reviewing the notes from the previous lecture.

This class meets two times per week for 90 minutes. You are expected to be there two times per week for 90 minutes. Lecture time is at a premium, so it must be used efficiently.

Tutorials (Claudio Lottaz)

Tutorial/Übung: Daniel Grünbaum

Wed 14:15-15:45 DE 1.127

First Meeting: 8.5.

You must attend the Übung

Programing Support: Moritz Jung

Fri 14:15-15:45 CIP PHY 1.0.02

First Meeting: 26.4.

We recommend that you use the programing support

Evaluation and Grading (7 credit points):

Home work assignments (required)

4 in class quizzes (required)

Final exam (required and graded)

Assignments (Übungsblatt)

A Problems: Theory

B Problems: Weblems (Computer)

C Problems: Simulations (Computer, Python)

D Problems: Programing Projects (Computer, Python)

You only need to return solutions (code) for D problems!

You need to be able to present solutions of A-C problems in the tutorial

Requirement: 50% of points in every class of problems (A-D)

Assignments (Übungsblatt)

One set of Assignments per week (in English)

Release: Wed 12:00 via GRIPS

Due (D): Wed 12:00 (the week after)!
per email to gub.vorlesung@ukr.de

Discussion (A-C): Wed 14:15

First Set: 24.4. (release)

8.5. (discussion)

Quizzes

4 quizzes during semester at the beginning of lectures

Relatively easy (compared to assignments and final)

Requirement: 50% of points

Final Exam

Thu 25.7. 10:15-11:45 (90 min)

Questions?

What are you studying?

**How much programming experience do you
have ?**

Which programming languages do you know?

How much do you know about genomics and molecular biology?

What mathematics classes did you attend?

Do you know what bioinformatics is?

OK Let's start