KLADDE

AFLYST 18/12 pga. få tilmeldte - Biophysical Chemistry

Title	AFLYST 18/12 pga. få tilmeldte - Biophysical Chemistry
Semester	F2024
Master programme in	Kemi / Chemical Biology / Environmental Science / Molecular Health Science / Physics and Scientific Modelling
Type of activity	Course
Teaching language	English
Study regulation	Read about the Master Programme and find the Study Regulations at ruc.dk Læs mere om uddannelsen og find din studieordning på ruc.dk

REGISTRATION AND STUDY ADMINISTRATIVE

Registration	Sign up for study activities at stads selvbetjening within the announced registration period, as you can see on the Studyadministration homepage. When signing up for study activities, please be aware of potential conflicts between study activities or exam dates. The planning of activities at Roskilde University is based on the recommended study programs which do not overlap. However, if you choose optional courses and/or study plans that goes beyond the recommended study programs, an overlap of lectures or exam dates may occur depending on which courses you choose.
Number of participants	The Master Programme/Institute reserves the right to cancel the course if fewer than 8 studentes are registered for the course.
ECTS	5
Responsible for the activity	Jeppe Kari (jkari@ruc.dk) Anders Malmendal (amalm@ruc.dk)
Head of study	Frederik Diness (diness@ruc.dk)
Teachers	
Study administration	INM Registration & Exams (inm-exams@ruc.dk)
Exam code(s)	U60049

ACADEMIC CONTENT

Overall objective	The aim of this course is to give the student molecular-level understanding of the structure, stability, interactions and dynamics of proteins—basically "Why do proteins behave like they do and how can we interfere with it?". The course will also introduce the principal methods used in modern protein science and provide practical experience in using some of these.
Detailed description of content	In this course, you will learn how different biophysical chemistry techniques can be used to gain information about a range of biomolecules and biological systems. We will see how thermodynamics, kinetics, NMR spectrometry, and electrochemistry can be used to understand properties and determine the structures of such systems. The course is divided into two parts which mainly focus on thermodynamics or reaction kinetics of biomolecules and biological systems. You need a basic understanding of the laws of thermodynamics to be able to follow this course.
Course material and Reading list	Pensum in this course are lecture notes and articles provided during the course.
Overall plan and expected work effort	• Lectures: 21 hours • Preparation: 28 hours • Experimental sessions: 21 hours • Experimental evaluation and report writing: 40 hours • Exam: 25 hours **Total for this 5 ECTS course is 135 hours**
Format	
Evaluation and feedback	The course includes formative evaluation based on dialogue between the students and the teacher(s). Students are expected to provide constructive critique, feedback and viewpoints during the course if it is needed for the course to have better quality. Every other year at the end of the course, there will also be an evaluation through a questionnaire in SurveyXact. The Study Board will handle all evaluations along with any comments from the course responsible teacher. Furthermore, students can, in accordance with RUCs 'feel free to state your views' strategy through their representatives at the study board, send evaluations, comments or insights form the course to the study board during or after the course.
Programme	The course consists of lectures and experimental sessions. The lectures will be a mix of PowerPoint presentations, problem-solving sessions and computer exercises where we also have time to discuss the results from the laboratory exercises. In the experimental sessions, you will be introduced to a method or technique in biophysical chemistry and use it to obtain experimental data which you will analyze using theory from the lectures. For the experimental session, you will need to hand in a report based on the experimental data

	you have obtained. This will be done in groups of 2-3 students formed during the first lecture.

ASSESSMENT

Overall learning outcomes	After completing the course the student will be able to: • account for the principal physico-chemical properties of proteins, such as structure, stability, interactions and dynamics and accounting for these properties in terms of molecular-level theroetical models • interpret experimental results from physico-chemical studies of proteins • apply physico-chemical concepts and models to solve problems involving proteins • carry out spectroscopic measurements on proteins • critically assess research literature in protein science, and effectively communicate with researchers in protein science.
Form of examination	Group portfolio and oral exam. Permitted group size: 2-3 students. Examples of written products are exercise responses, talking points for presentations, written feedback, reflections, written assignments. The preparation of the products may be subject to time limits. The character limit of the portfolio is: For 2 students: 12,000-36,000 characters, including spaces. For 3 students: 12,000-36,000 characters, including spaces. The character limits include the cover, table of contents, bibliography, figures and other illustrations, but exclude any appendices. Time allowed for exam including time used for assessment is for: 2 students: 45 minutes. 3 students: 60 minutes. The assessment is individual and based on the student's individual performance. The assessment is an overall assessment of the written product(s) and the subsequent oral examination.. Permitted support and preparation materials at the oral exam: Personal notes, own reports and assignments. Assessment: Pass/Fail. Moderation: Internal co-assessor.
Form of Re-examination	Samme som ordinær eksamen / same form as ordinary exam
Type of examination in special cases	
Examination and assessment criteria	Groups of students will write reports based on experiments carried out during the course. The oral individual exam will start with a presentation of the results described in the report. The assessment criteria regarding the written part:

- Account for the principal physico-chemical properties of proteins, such as structure, stability, interactions and dynamics and not the least enzymatic activity, and accounting for these properties in terms of molecular-level theoretical models.
- Interpret experimental results from spectroscopic and other physico-chemical studies of proteins.
- Apply physico-chemical concepts and models to solve problems involving proteins.

The assessment of the oral exam is based on the student's ability to meet the criteria mentioned above and their ability to: - clearly present and communicate the scientific content of the reports - engage in a scientific dialoged and discussion with the assessors

Furthermore, whether the performance meets all formal requirements

The character limit of the portfolio is:

- For 2 students: 12,000-36,000 characters, including spaces.
- For 3 students: 12,000-36,000 characters, including spaces.

The character limits include the cover, table of contents, bibliography, figures and other illustrations, but exclude any appendices.

The assessment is an overall assessment

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