Title of module	**Recombinant proteins**
Term/semester	Summer term / 2
VAK-Number	Will be assigned centrally
Credit points	6 ECTS
Compusory/ elective course	Elective course
Teaching methods	Method: Exercises; Seminar; Lab course SWS: 1.0 (14 h); 1.0 (14 h); 4.0 (56 h) CP: 1.5; 1.5; 3.0
Self studies	protocols 50 h
Module representative	Prof. Sørge Kelm
Instructor	Prof. Sørge Kelm (Biochemistry)
Examiner	Prof. Sørge Kelm
Objectives	*The objectives of this course are to provide* • a basic understanding of concepts in the design of constructs for recombinant proteins • develop the practical skills of plasmid construction, recombination of DNA, mutagenesis.
Content of teaching	Plasmid construction with software tools, application of molecular biology tools, like PCR, restriction digest, analytical electrophoresis, primer design *Theoretical part of the course will be covered in :* • Plasmid construction with software tools • application of molecular biology tools, like PCR, restriction digest, analytical electrophoresis, primer design • transformation and expression of proteins in bacterial and eukaryotic systems *Every student will persue her/his own project to create and prepare a new plasmid encoding for a new recombinant protein. The following techniques will be applied in the practical part of the course:* • plasmid recombination using general molecular biology methods like PCR, restriction digest, ligation • transformation of bacteria, colony PCR • analytical and preparative agarose electrophoresis.
Learning results	• Ability to comprehensively understand the design of recombinant proteins. • Capacity to perform the methods used in the course. • Competence to develop a strategy and experiments addressing questions in the generation of plasmids encoding recombinant proteins. • Competence to trouble shoot experimental approaches of recombination of plasmid DNA. • Ability to document experiments and their results in a lab notebook.
Control of the learning progress	Lab protocols
Grading	protocol (100%)
Frequency	Each summer term
Use in other study courses	Open to students of other M.Sc. courses in biology and chemistry
Requirements	Basic biochemistry in theory and practice