### Title of module
Recombinant proteins

### Term/semester
Summer term / 2

### VAK-Number
Will be assigned centrally

### Credit points
6 ECTS

### Compulsory/ elective course
Elective course

### Teaching methods

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<th>SWS</th>
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<td>Exercises</td>
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<td>Seminar</td>
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<td>Lab course</td>
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### 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

November 2013