



## DEPARTMENT OF CHEMISTRY AND MOLECULAR BIOLOGY

### **BIO523 Drug Development, 7.5 higher education credits**

Utveckling av läkemedel, 7,5 högskolepoäng

*Second Cycle*

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#### **Confirmation**

This course syllabus was confirmed by Department of Chemistry and Molecular Biology on 2017-07-03 to be valid from 2017-07-04, autumn semester of 2017.

*Field of education:* Science 100%

*Department:* Department of Chemistry and Molecular Biology

#### **Position in the educational system**

This is a second-cycle course in Biology and is designed to provide an advanced knowledge in Drug Development. The course can be included as a part of a Bachelor's degree in Molecular Biology and Biology, or as part of a Master's degree in Molecular Biology, Biology or Genomic and Systems Biology. The course is also offered as a separate course.

#### *Main field of studies*

Molecular Biology with Specialization in Genomics and Systems Biology

Molecular Biology

Biology

#### *Specialization*

A1N, Second cycle, has only first-cycle course/s as entry requirements

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#### **Entry requirements**

Students must have successfully completed the basic courses in Cell Biology, BIO900, 15 hec, Molecular Genetics, BIO905, 15 hec, Biological Form and Function, BIO910, 15 hec, Ecology and Evolution, BIO915, 15 hec and Biodiversity and Systematics, BIO920, 15 hec plus 30 hec Chemistry or equivalent courses.

English proficiency is required to the level of English 6/English Course B from Swedish Upper Secondary School, or be certified by an internationally recognized test, for example TOEFL, IELTS. In addition a completed depth course of 15 credits in a relevant area is also required.

### **Learning outcomes**

After completion of the course the student is expected to be able to:

#### *Knowledge and understanding*

- Describe and understand the different processes and approaches used in drug development.
- Have knowledge about different working methods used in industry

#### *Skills and abilities*

- Be able to describe the concepts and terminology within the subject field.
- Be able to read and understand scientific articles within the subject.

#### *Judgement and approach*

- Show ability to analyze, evaluate and critically discuss achieved results and other information, both written and orally.
- Be able to critically evaluate scientific articles in the subject.

### **Course content**

The course is designed to provide information to modern thinking in drug development, with emphasis on the earlier part of the process (drug discovery). Among other things, the following steps are taken up: identification and validation of new cellular target molecules; interactions between inhibitor and target molecule; optimization of small molecules for better binding and stability; bioinformatics; genetic model organisms; methods for high throughput screening. Invited lecturers will address various applied and basic scientific aspects and opportunity will be given to study practical ways of working.

### **Form of teaching**

The course is based on lectures, study visits with demonstrations and other groups exercises as shown in the course schedule. All moments except the lectures are compulsory.

*Language of instruction:* English

**Assessment**

Exams are organized at the end of the course or during the course of the teaching.

Missed compulsory sessions may be made up during the course when that is possible, or the next time the course runs.

A student who has failed a test twice has the right to change examiner, if that is possible. A written application should be sent to the Department.

In cases where a course has been discontinued or major changes have been made a student should be guaranteed at least three examination occasions (including the ordinary examination occasion) during a time of at least one year from the last time the course was given.

**Grades**

The grading scale comprises: Pass with Distinction (VG), Pass (G) and Fail (U).

**Course evaluation**

An evaluation will be done at the end of the course. The results of the evaluation will be communicated to the students and will function as a guide for the development of the course.