



BB2510 Proteomik 6,0 hp

Proteomics

När kurs inte längre ges har student möjlighet att examineras under ytterligare två läsår.

Fastställande

Kursplan för BB2510 gäller från och med HT11

Betygsskala

A, B, C, D, E, FX, F

Utbildningsnivå

Avancerad nivå

Huvudområden

Bioteknik

Särskild behörighet

At least 150 credits from grades 1, 2 and 3 of which at least 100 credits from years 1 and 2, and bachelor's work must be completed. The 150 credits should include a minimum of 20 credits within the fields of Mathematics, Numerical Analysis and Computer Sciences, 5 of these must be within the fields of Numerical Analysis and Computer Sciences, 20 credits of Chemistry, possibly including courses in Chemical Measuring Techniques and 20 credits of Biotechnology or Molecular Biology.

Undervisningsspråk

Undervisningsspråk anges i kurstillfällesinformationen i kurs- och programkatalogen.

Lärandemål

The aim of the course is to provide the students with an introduction to current methodologies and trends in the field of proteomics. The student should also obtain an overview and awareness of typical proteomics applications.

After completed course the student should be able to

- describe and discuss the possibilities and advantages, and the complexity and drawbacks of various proteomics technologies
- compare traditional methods with emerging technologies
- suggest suitable approaches for specified applications and motivate the choice
- speculate and argue about the future of proteomics technologies
- participate in scientific discussions regarding proteomics technologies
- critically evaluate scientific results

Kursinnehåll

The course is focused on different methods, technologies and strategies currently used within the field of proteomics in general and with an emphasis on biomarker discovery. The lectures will cover background and recent advances for both classical proteomics methods, such as 2D-gel electrophoresis and mass spectrometry, and strategies based on high-throughput antibody generation, bioinformatics and structural approaches.

Kurslitteratur

- **Principles of Proteomics** by R.M Twyman, Garland Science, ISBN: 1859962734
- distributed review articles
- handouts from all lectures

Examination

- TEN1 - Skriftlig tentamen, 5,0 hp, betygsskala: A, B, C, D, E, FX, F
- ÖVN1 - Övning, 1,0 hp, betygsskala: P, F

Examinator beslutar, baserat på rekommendation från KTH:s handläggare av stöd till studenter med funktionsnedsättning, om eventuell anpassad examination för studenter med dokumenterad, varaktig funktionsnedsättning.

Examinator får medge annan examinationsform vid omexamination av enstaka studenter.

The examination consists of two parts, one oral and one written. The oral exam will be based on a panel discussion where you in groups will prepare a discussion on a given subject. One group will argue for the possibilities and advantages for a certain method or strategy and

another group will then argue for the drawbacks and limitations. It is important to see this part as not only an examination, but also as a learning activity.

The written exam consists of discussion type questions, where you are expected to show that you have obtained the knowledge according to the aims of the course. You will also be able to express your opinion regarding various aspects of proteomics technologies. Opinions cannot be right or wrong but the way the argumentation is done will reveal your knowledge.

Övriga krav för slutbetyg

A written examination (TEN1, 5 hp, grading scale A-F).

Participation in panel discussion (ÖVN1, 1 hp, Pass/Fail)

Etiskt förhållningssätt

- Vid grupparbete har alla i gruppen ansvar för gruppens arbete.
- Vid examination ska varje student ärligt redovisa hjälp som erhållits och källor som använts.
- Vid muntlig examination ska varje student kunna redogöra för hela uppgiften och hela lösningen.