



**Karolinska  
Institutet**

Course syllabus for

## **Introduction to Biomedical Science, 10 credits**

Introduktion till biomedicin, 10 hp

This course syllabus is valid from autumn 2007.

Please note that the course syllabus is available in the following versions:

Autumn2007 , [Autumn2009](#) , [Autumn2011](#) , [Autumn2013](#)

Course code	1BI001
Course name	Introduction to Biomedical Science
Credits	10 credits
Form of Education	Higher Education, study regulation 2007
Main field of study	Biomedicine
Level	G1 - First cycle 1
Grading scale	Fail (F), fail (Fx), sufficient (E), satisfactory (D), good (C), very good (B) or excellent (A)
Department	Department of Medical Biochemistry and Biophysics
Participating institutions	<ul style="list-style-type: none"><li>• Department of Neuroscience</li></ul>
Decided by	Programnämnden för biomedicinprogrammet
Decision date	2007-06-19
Course syllabus valid from	Autumn 2007

## **Specific entry requirements**

Standardised admission requirements E.1.

## **Objectives**

On completion of the course, the student should be able to at a general level, describe the field of biomedicine, account for basic anatomic concepts and structures, account for basic biochemical and cell biology-related concepts, describe basic principles how biological macromolecules are structured and how they function, describe the principles of the information flow in the cell, demonstrate basic skills in biochemical and molecular biological laboratory work, use the computer as a tool in biomedicine, demonstrate an understanding of an ethical and security approach to biomedical work

## **Content**

The course defines the subject area of biomedicine and points out the areas where biomedicine is applied. Further, specific knowledge will be provided within: Basic biochemical and cell biology-related

connections, the organisation of the body and the computer as a tool in biomedicine. Orientation in biomedicine: General lectures on various biomedical areas where also an ethical attitude is provided and advantages and disadvantages of different biomedical model systems. Use of computers: The computer as a tool and presentation of general and specific programs. Basic biochemistry and cell biology: Biochemical and cell biology-related concepts, the structure of the cell, simple thermodynamic concepts, pH and buffers, macromolecules and protein chemistry, structure and function relationships, the central role of enzymes in the cell function, the flow of genetic information (replication, transcription and translation - at a general level) and basics of pharmacogenetics. The organisation of the body: Basic anatomic concepts and structures, and basic integrative physiology. Cardiopulmonary resuscitation

## Teaching methods

The teaching includes lectures, web-based seminars, laboratory sessions, group tuition and project work. The project work is presented both in writing and orally, where also the use of the computer as a tool is included.

## Examination

Laboratory sessions and project work are examined with a two-graded scale, Pass/Fail. The course is completed with a written examination. The final grade in the course is determined by the grade obtained in the written examination, and to get at least the E grade in the course, a Pass grade in the laboratory sessions and in the project work are required. Attendance is compulsory at laboratory sessions, including laboratory lectures, at presentations, and at cardiopulmonary resuscitation. The course director determines if it is possible and if so how the student can compensate possible absence from compulsory parts. Students who have not passed the regular examination are entitled to participate in five more examinations. If the student is not approved after four examinations, he/she is recommended to apply for a new admission in the next regular course, and may, on completion of the course, participate in two more examinations. If the student has failed six examinations/tests, no additional examination or new admission in the course is given. As examination sessions, those times are counted when the student participated in one and the same test. Submission of a blank exam is counted as examination attempt. An examination for which the student registered but not participated is not counted as an examination.

## Transitional provisions

Irrespective of changes in the contents of the course, and how it is examined, after each course a total of, at least, eight examinations during a period of at least two years from the end of the course, will be provided.

## Other directives

The course is given in Swedish but certain teaching in English can occur. Course evaluation will be carried out in accordance with the guidelines established by the Board of Education. Course council meeting is held with the course coordinator and student representatives.

## Literature and other teaching aids

*Berg, Jeremy Mark; Tymoczko, John L.; Stryer, Lubert*

### Biochemistry

6. ed. : New York, N.Y. : Freeman, cop. 2007 - xxxv, 1026, [86] s.

ISBN:0-7167-8724-5 (inb.) LIBRIS-ID:10124283

[Library search](#)

*Cohen, Barbara J.; Taylor, Jason J.; Memmler, Ruth Lundeen*

**Memmler's the structure and function of the human body**

8. ed. /b Barbara Janson Cohen, Jason James Taylor : Philadelphia : Lippincott Williams & Wilkins, cop. 2005 - 390 s.

ISBN:0-7817-5184-5 (hardcover) LIBRIS-ID:9889309

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