



LUNDS UNIVERSITET  
Medicinska fakulteten

Board of the Faculty of Medicine

PROGRAMME SYLLABUS

Ref:<sup>1</sup>

M:G 221 1404/06

Approved by the Board of the Faculty of  
Medicine on  
30/1 2007      Valid from 1/7 2007

## **Bachelor of Medical Science with a Major in Biomedicine**

180 higher education credits

First cycle  
LADOK VGBIM

### **Programme description**

The Bachelor of Medical Science with a Major in Biomedicine programme is taught by a number of departments across the faculty. Its special profile is that it combines scientific training with medical training and prepares students for a future professional role in biomedical research (whether in the private sector or in public institutions such as universities) and as caretakers, communicators and developers of biomedical knowledge. The profile, unique syllabus and professional focus of this programme clearly delimit it from the B Sc programmes in laboratory science, biology, chemistry and medicine by combining a theoretical and practical scientific grounding in human cell biology, physiology, pharmacology and nosology. The objective of the programme is that students will come to understand the link between molecular mechanisms and biological function, and apply this awareness to questions of relevance to the origin of disease in humans. There is a clear progression in line with the purpose of the programme as described above.

The degree programme in biomedicine provides broad training in how basic scientific knowledge and techniques – primarily in the fields of chemistry and biology – are linked and applied to problems in medicine and human biology. The enormous advance of knowledge and technology over past decades has brought about a need for a special programme, since the subject has become much too complex to allow it to be covered simply as part of other degree courses, such as those in medicine, chemistry or molecular biology. Furthermore, biomedicine is becoming an increasingly important part of the everyday lives of many people, in everything from personal health decisions to politics and culture. The goal is thus that students graduating from the programme will be able to work in biomedical research and development in universities, private-sector companies, care organisations and other public sector organisations, and also that they will be able to act as caretakers, communicators and developers of biomedical knowledge in other roles, such as that of journalist, teacher or politician.

The Bachelor of Medical Science with a Major in Biomedicine programme prepares students for further study at Master's level as well as for direct entry into the workplace.

### **Learning outcomes**

On completing the course, the student must have achieved the following learning outcomes in addition to those applying to the Bachelor degree in general.

#### **Knowledge and understanding**

For a Degree of Bachelor of Medical Science with a Major in Biomedicine, students must

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- demonstrate awareness and understanding of the basic processes of life at various levels, such as chemical, biochemical, molecular and cellular levels and those of the organism (physiological) and population, with a degree of detail equivalent to that of a modern international university-level textbook in the subject.
- demonstrate knowledge and understanding of how to use the above knowledge to describe various medical problems, with respect to their cause, mechanism, diagnosis and treatment.
- have gained insight into how knowledge develops within the scientific process, critical thinking and creativity, particularly within the field of biomedicine.
- have achieved a professional scientific approach and professional identity.

## Skills and abilities

For the Degree of Bachelor of Medical Science with a Major in Biomedicine, students must

- be able to apply the above knowledge in the planning and implementation of small-scale development/research projects in a biomedical research laboratory, a clinical laboratory department or similar.
- be able to practically plan and implement laboratory experiments and examinations in the field of biomedicine.
- be able to read and assess original scientific papers and review articles in the field of biomedicine, and be able to read, assess and choose between methodology descriptions for biomedical laboratory work.
- be able to summarise, orally and in writing, the question at issue, the implementation and results of a biomedical development project (of a scope equivalent to a 15-credit project) for an expert and lay audience.

## Judgment and approach

For a Degree of Bachelor of Medical Science with a Major in Biomedicine, students must

- be able to work as part of a team alongside other professional categories in the field of biomedicine, such as doctors, nurses, chemists and biomedical laboratory scientists, and read and assess their views, and present their own in a constructive fashion.
- be able to communicate and apply biomedical knowledge in public cultural and political debate.
- have achieved sufficient knowledge, awareness, independence and communicative ability to enable further study at Masters level in biomedical fields.

## Course information

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#### Year 1 (term 1)

- Cell biology 13.5 credits
- Professional development 1 1.5 credits
- Biostatistics 7.5 credits
- Organic chemistry 7.5 credits

#### Year 1 (term 2)

- General and analytical chemistry 7.5 credits
- Inorganic chemistry 7.5 credits
- Cell chemistry 15 credits

#### Year 2 (term 3)

- Molecular cell biology and genetics 13.5 credits
- Professional development 2 1.5 credits
- Microbiology and immunology 13.5 credits
- Professional development 3 1.5 credits

#### Year 2 (term 4)

- Physiology 15 credits
- Pathobiology and pharmacology 13.5 credits
- Professional development 4 1.5 credits

#### Year 3 (terms 5–6)

- Biomedical ethics 6 credits
- Professional development 5 1.5 credits
- Developmental biology 12 credits
- Molecular medicine 24 credits
- Professional development 6 1.5 credits
- Independent degree project 15 credits

## About the degree

For the degree of Bachelor of Medical Science with a Major in Biomedicine, students must complete 180 higher education credits, of which at least 90 in the main subject of biomedicine. The main subject of biomedicine is comprised of the courses taught during terms 4–6 of the programme. At least 15 of the credits are to be from an independent degree project.

These requirements apply to students starting their course in or after the autumn term of 2007.

The name of the degree is Bachelor of Medical Science with a Major in Biomedicine.

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## Admission requirements and selection procedure

Apart from basic eligibility for higher study, upper secondary-level certificates in Mathematics, Physics, Chemistry and Biology are generally also required. Please contact the Faculty of Medicine Study Guidance Office, [http://www.med.lu.se/english/education/undergraduate\\_studies/study\\_guidance](http://www.med.lu.se/english/education/undergraduate_studies/study_guidance) for information about requirements applying to your country. Selection criteria are grades and results from the Swedish University Aptitude Test.

## Miscellaneous

1. The following transitional rules apply to the Degree of Bachelor of Medical Science with a Major in Biomedicine in relation to previous degree courses:

- Students who commenced their course in the autumn term of 2006: To complete the Degree of Bachelor of Medical Science with a Major in Biomedicine, students must complete at least 4.5 credits in professional development, 15 credits in physiology, 13.5 credits in pathobiology and pharmacology, 12 credits in developmental biology, 24 credits in molecular medicine, 6 credits in biomedical ethics and at least 15 credits of independent work within the degree programme.
- Students who commenced their course prior to the autumn term 2006: To complete the Degree of Bachelor of Medical Science with a Major in Biomedicine, students must complete at least 10.5 credits in basic cell biology, 15 credits in physiology, 13.5 credits in pathobiology and pharmacology, 12 credits in developmental biology, 24 credits in molecular medicine, and at least 15 credits of independent work within the degree programme.

2. Transitional regulations in relation to previous courses:

- Students who were admitted to the Biomedicine programme at Lund University prior to the autumn term of 2007 will be offered courses enabling them to take the degree of Bachelor of Medical Science with a Major in Biomedicine within the time frame that applied when the student was accepted into the programme. Students will also be able to complete their commenced one-year Master's course by selecting optional courses provided in the two-year Master's programme in Biomedicine and other Master's courses.