

## Degree Programme in Biomedical Laboratory Science (210 cr)

*English translation, degree programme conducted in Swedish.* Degree: **YH-examen inom social- och hälsovård**  
Qualification title: **Bioanalytiker (YH)**  
Duration of studies: **3,5 år**  
Study type: **Full-time**  **Part-time**

- » [Generic competences](#)
- » [Language Information for Students with Swedish or Finnish as Prior Language of Instruction.](#)

**Kontaktuppgifter:** [Enheter](#) | [Utbildningsansvariga](#)

Code	Name	Cr/year/total					
		1	2	3	4	5	Total
Gru	<b>Core Studies</b>						12 cr
BA14IN	<b>Language and Introduction to Academic Studies</b> <i>The students are familiar with academic studies and are able to plan and take responsibility for their own studies. They are able to retrieve and use different kinds of information and literature, as well as express themselves suitably and clearly in different situations. They can use the tools of project planning and handling. They have developed and enriched their vocabulary and language skills so they correspond to the requirements of professional life and future studies. They manage the technical terminology used within the degree programme. They understand the importance of environmental responsibility and sustainable development.</i>	9		3			12 cr
BA18IN01	<b>• Introduction to Academic Studies</b> <i>The student</i> <ul style="list-style-type: none"> <li>- is familiar with his/her UAS and her/his study programme</li> <li>- is familiar with the functions and tools that support the individual learning process</li> <li>- reflects on his/her studies and future plans and is aware of the significance of personal development in relation to life-long learning and the profession</li> <li>- can generate new knowledge and create personal learning environments</li> <li>- is familiar with the core values of the profession</li> <li>- can retrieve and critically view information</li> <li>- can work in groups and teams with individuals</li> <li>- understand the importance of environmental responsibility and sustainable development within different fields, seen from a ecological, social and economical perspective.</li> <li>- are able to see their own responsibility as practitioners of a profession and implement this knowledge within their own field. However, they must also possess the tools to work for global and lasting social development</li> </ul>	3					3 cr
BA14SV01	<b>• Swedish</b> <i>The student</i> <ul style="list-style-type: none"> <li>- can communicate coherently and in a professional manner both orally and in writing, in a work context</li> <li>- demonstrates appropriate knowledge of the process of academic writing and a correct use of references</li> <li>- can use different channels to retrieve information and compile reports according to the standard form and layout</li> </ul> <p><i>Students with Finnish as prior educational language have to show such skills in the Swedish language as are in accordance with the Act on the Knowledge of Languages Required of Personnel in Public Bodies (424/2003). This means that these students must show satisfactory (grade 1, 2 or 3) or good (grade 4 or 5) skills in speaking and writing Swedish. Written and oral skills are assessed separately.</i></p>	3					3 cr
BA14FI01	<b>• Finnish</b> <i>The student</i> <ul style="list-style-type: none"> <li>- demonstrates ability to communicate in a natural and professional manner, in speaking as well as writing.</li> <li>- demonstrates proficiency in the terminology of the field and is able to benefit from research and literature in his/her professional development</li> <li>- shows such skills in the Finnish language as are in accordance with the Act on the Knowledge of Languages Required of Personnel in Public Bodies (424/2003). This means that the student must show satisfactory (grade 1, 2 or 3) or good (grade 4 or 5) skills in speaking and writing Finnish. Written and oral skills are assessed separately.</li> </ul>	3					3 cr
BA14EN01	<b>• English</b> <i>The student</i> <ul style="list-style-type: none"> <li>- shows the ability to communicate in a professional manner in a work context in speaking as well as writing</li> <li>- is familiar with essential terminology within his/her field and is able to benefit from professional literature</li> <li>- has a positive attitude to developing his/her receptive and productive language skills and is familiar with the relevant tools</li> <li>- is aware of cultural differences in international contexts</li> </ul>			3			3 cr
YRK VÅ	<b>THEORETICAL STUDIES</b>						97 cr
BA14LV	<b>Care- and Clinical Laboratory Science</b> <i>The students have basic insights into the human being, health, care and the world as the fundamentals of Caring Science. They also have basic insights into biomedical laboratory science and its relation to other sciences. Have insights in ethics in clinical care.</i>		3		3		6 cr
BA18LV01	<b>• Biomedical Laboratory Science and Quality Development</b> <i>The students</i> <ul style="list-style-type: none"> <li>- have basic insights into biomedical laboratory science and its relation to other sciences.</li> <li>- have basic insights into professional and legal ethics.</li> </ul>				3		3 cr

BA18LV02	<p><b>• Caring Science</b> The students</p> <ul style="list-style-type: none"> <li>- have basic information about the human being, health, care, and the world as fundamentals of Caring Science.</li> <li>- understand the meaning of a process-oriented caring perspective and its application within nursing.</li> <li>- have insights in ethics in clinical care</li> </ul>		3			3 cr
BA14LF	<p><b>Leadership and Entrepreneurship</b> The students</p> <ul style="list-style-type: none"> <li>- are familiar with the impact and consequences of central psychological factors on the working individual. They are also familiar with occupational legislation.</li> <li>- have insights into the administration of clinical laboratory work.</li> <li>- have fundamental insights into entrepreneurship</li> <li>- are able to work with quality development.</li> <li>- have insights in patient safety</li> </ul>			3	4	7 cr
BA14LF01	<p><b>• Leadership &amp; Entrepreneurship</b> The students</p> <ul style="list-style-type: none"> <li>- are familiar with the main principles of organizational activity and leadership, and have a preparedness to lead the work.</li> <li>- have insights into the planning and organization of activities.</li> <li>- are familiar with the different forms of activities of working life and are able to participate in the professional community.</li> <li>- fundamental insights into entrepreneurship</li> </ul>				4	4 cr
BA16LF02	<p><b>• Patient Safety</b> Studerande</p> <ul style="list-style-type: none"> <li>- har kunskap om och kan tillämpa lagstiftning beträffande patientsäkerhet</li> <li>- har kunskap om och kan tillämpa centrala begrepp och metoder inom kvalitetshandling och -utveckling inom vården</li> <li>- kan i vården integrera patientsäkerhet och kvalitetssäkring</li> <li>- kan utvärdera vårdens kvalitet med beaktande av hållbar utveckling</li> <li>- förstår och har insikter i röntgenundersökningarnas betydelse inom patientvården</li> <li>- känner till lagar och förordningar samt direktiv gällande medicinsk strålning</li> <li>- känner till medicinska strålningens användningsområden</li> <li>- har grundläggande insikter och färdigheter gällande strålning och strålskydd samt kan minimera strålningsriskerna och ansvara för strålskyddsaspekterna i sitt eget arbete</li> <li>- har den grundläggande utbildning i strålskydd för hälsovårdspersonal som ST-direktiv 1.7 (Säteilysovelukoulutus terveydenhuollossa) föreskriver</li> </ul>			3		3 cr
BA14FU	<p><b>Research and Development</b> The students</p> <ul style="list-style-type: none"> <li>- are familiar with the philosophy of science.</li> <li>- are familiar with the main quantitative and statistical concepts, as well as the most common qualitative research methods.</li> <li>- are familiar with the research process and its different stages.</li> </ul>			7		7 cr
BA16FU01	<p><b>• Research Methodology</b> The students</p> <ul style="list-style-type: none"> <li>-have basic insights into epistemology and the philosophy of science.</li> <li>-can put the theoretical research process into practice when writing the thesis and when doing projects.</li> <li>-understand, and are able to express themselves, using qualitative and quantitative approaches, methods and scientific interests.</li> </ul>			3		3 cr
BA16FU02	<p><b>• Research Methods</b> Students</p> <ul style="list-style-type: none"> <li>- are familiar with the main quantitative and statistical concepts, as well as the most common qualitative research methods.</li> <li>- are familiar with the research process and its different stages.</li> <li>- can put the theoretical research process into practice when writing the thesis and when doing projects.</li> <li>- understand, and are able to express themselves, using qualitative and quantitative approaches, methods and scientific interests.</li> </ul>			4		4 cr
BA14VG	<p><b>The Basics of the Caring Field</b> The students</p> <ul style="list-style-type: none"> <li>- have basic insights into the field of health care and social welfare, in order to place clinical laboratory work in a comprehensive perspective.</li> <li>- are able to provide first aid and are also familiar with procedures in states of emergency.</li> <li>- have basic skills in clinical nursing.</li> <li>- understand the importance of sustainable development.</li> </ul>	7		3	1	11 cr
BA14VG01	<p><b>• First Aid</b> The students</p> <ul style="list-style-type: none"> <li>- are able to identify a person's need for first aid, and are able to provide first aid.</li> <li>- are familiar with the procedures of emergency cases.</li> </ul>	2				2 cr

BA14VG02	<ul style="list-style-type: none"> <li>• <b>Social Welfare and Health Care in Finland</b></li> </ul> <p>The students</p> <ul style="list-style-type: none"> <li>- have basic insights into the field of health care and social welfare.</li> </ul>	2					2 cr
BA14VG03	<ul style="list-style-type: none"> <li>• <b>Basic Clinical Care</b></li> </ul> <p>The students</p> <ul style="list-style-type: none"> <li>- have fundamental skills in clinical nursing and its main methods.</li> <li>- are familiar with good ergonomics and realize the importance of acting according to aseptic principles.</li> <li>- are able to apply interactive skills, and embrace a comprehensive and process-oriented perspective in the caring profession.</li> </ul>	3					3 cr
BA16VG04	<ul style="list-style-type: none"> <li>• <b>Clinical care</b></li> </ul> <p>Studierende:</p> <ul style="list-style-type: none"> <li>-har insikt i de vanligaste inremedicinska och kirurgiska sjukdomarna samt i vården och behandlingen av dessa</li> <li>-har grundläggande kunskaper om pre- och postoperativ vård samt akutvården och intensivvården och förstår de speciella behov patienterna har.</li> </ul>			3	1		4 cr
BA14GM	<ul style="list-style-type: none"> <li>• <b>The Basics of Methodology</b></li> </ul> <p>The students</p> <ul style="list-style-type: none"> <li>- have fundamental insights in general, inorganic and organic chemistry.</li> <li>- understand the importance of sustainable development.</li> </ul>	4					4 cr
BA16GM01	<ul style="list-style-type: none"> <li>• <b>General and inorganic chemistry</b></li> </ul> <p>The students</p> <ul style="list-style-type: none"> <li>- have fundamental knowledge of general and inorganic chemistry, as well as basic chemical concepts and nomenclature</li> <li>- master the basics of chemical reactions, chemical reaction rates and equilibrium, acids, bases, pH, pKa, pKb, the states of matter, the mole relations of gases and thermochemistry, redox reactions and electrochemistry</li> </ul>	2					2 cr
BA16GM02	<ul style="list-style-type: none"> <li>• <b>Organic chemistry</b></li> </ul> <p>The students</p> <ul style="list-style-type: none"> <li>- have fundamental knowledge about organic chemistry, as well as chemical concepts and nomenclature</li> <li>- possess knowledge of functional groups and common organic compounds as well as organic reactions</li> <li>- have basic knowledge about alcohols, aldehydes, ketones, carboxylic acids, ethers, esters, amines and amides</li> </ul>	2					2 cr
BA14BV	<ul style="list-style-type: none"> <li>• <b>Biosciences</b></li> </ul> <p>The students</p> <ul style="list-style-type: none"> <li>- are familiar with the administration of medication.</li> <li>- are familiar with molecules that construct living organisms.</li> <li>- are familiar with normal human biochemistry and biology, that is, cell biology, histology, molecular biology, hematology, immunology, anatomy and physiology.</li> <li>- are familiar with the purpose of genes and genetics.</li> <li>- are familiar with the biology of microbes and basic clinical microbiology.</li> <li>- are familiar with human hematology and basic clinical hematology.</li> <li>- understand the importance of biosciences within bioanalysis.</li> <li>- are able to find and take part of bioscientific information.</li> </ul>	17	17				34 cr
BA14BV01	<ul style="list-style-type: none"> <li>• <b>Biochemistry</b></li> </ul> <p>The students</p> <ul style="list-style-type: none"> <li>- have fundamental insights into molecules that constitute living organisms</li> <li>- have fundamental insights into biochemical processes</li> <li>- master biochemical terminology</li> <li>- are familiar with the main sources of information related to biochemistry</li> <li>- understand the importance of biochemistry in regard to bioanalysis</li> </ul>	3					3 cr
BA16BV04	<ul style="list-style-type: none"> <li>• <b>Medical Treatment</b></li> </ul> <p>The students</p> <ul style="list-style-type: none"> <li>- are familiar with the ethical aspects and statutes of medication administration.</li> <li>- are familiar with different forms of medication and administration.</li> <li>- are familiar with different medication groups, indications, interactions and the most common side-effects. They are also able to observe and assess the effect of the medication.</li> <li>- command the fundamental rules of arithmetic needed for medication dosage, and are able to administer medication flawlessly in exercises (pill dispensers/medicin tray, subcutant, intramuscular)</li> <li>- are aware of their responsibilities when administering medication.</li> <li>- are familiar with the concepts and terminology of pharmacology, and are knowledgeable of pharmacokinetics and pharmacodynamics</li> <li>- know clinical pharmacology in a biomedical context</li> <li>- have knowledge of drug therapy among the most common endemic diseases</li> <li>- know various types of pain medication</li> <li>- know medication used as anticoagulant therapy</li> </ul>		5				5 cr

BA16BV02	<p>• <b>Anatomy and Physiology 1</b> The students</p> <ul style="list-style-type: none"> <li>- have knowledge of Latin and Greek anatomical terms</li> <li>- have knowledge about cells, tissues and the integumentary system</li> <li>- have knowledge about and understands how the nervous system regulates physiological processes in the body</li> <li>- understands the structure and function of the sense organs</li> <li>- understands how the endocrine system regulates body metabolism and organ functions</li> <li>- have knowledge about the structure and function of the reproductive system</li> <li>- have fundamental insights into the support- and movement organs</li> </ul>	3					3 cr
BA16BV03	<p>• <b>Anatomy and Physiology 2</b> The students</p> <ul style="list-style-type: none"> <li>- have knowledge of the structure and function of the circulatory system</li> <li>- have knowledge of the structure and function of the lymphatic system</li> <li>- have knowledge of the structure and function of the respiratory system</li> <li>- have knowledge of the structure and function of the digestive and secretory organs</li> <li>- have knowledge of the structure and function of the kidneys and urinary tracts</li> <li>- have knowledge of the importance of the fluid, electrolyte and acid-base balance in the body</li> </ul>	3					3 cr
BA14BV05	<p>• <b>Cell biology</b> The students</p> <ul style="list-style-type: none"> <li>- are familiar with the structure and function of the cells.</li> <li>- are familiar with the function of the cell organelles.</li> <li>- are able to identify the cell organelles.</li> <li>- are familiar with cell splitting and cell death.</li> <li>- are familiar with human cells and embryology.</li> <li>- command terminology of cell biology.</li> <li>- are familiar with the main sources of information within cell biology.</li> <li>- understand the importance of cell biology within bioanalysis.</li> </ul>	2					2 cr
BA18BV06	<p>• <b>Histology and histotechnique</b> The students</p> <ul style="list-style-type: none"> <li>- are familiar with the structure and characteristics of the different tissues.</li> <li>- are able to identify fundamental tissues in figures.</li> <li>- understand how the tissues influence the structure of the organs.</li> <li>- have basic knowledge in histotechniques</li> <li>- command terminology of histology and histotechnique.</li> <li>- are familiar with the main sources of information within histology and histotechnique</li> <li>- understand the importance of histology and histotechnique within bioanalysis.</li> </ul>	3					3 cr
BA14BV07	<p>• <b>Hematology 1</b> The students</p> <ul style="list-style-type: none"> <li>- are familiar with human cells in the blood and the organs that produce blood (blood production - development and regulation).</li> <li>- have fundamental insights in laboratory tests and the examination process connected to it.</li> <li>- are familiar with the terminology of hematology.</li> <li>- are familiar with the main sources of information within hematology.</li> <li>- understand the importance of hematology within bioanalysis.</li> </ul>	3					3 cr
BA18BV08	<p>• <b>Hematology 2</b> The students</p> <ul style="list-style-type: none"> <li>- have insights in the coagulation process and blood transfusion.</li> <li>- have fundamental insights in laboratory tests work and the working process connected to it.</li> <li>- are familiar with the main sources of information within hematology.</li> <li>- understand the importance of hematology within bioanalysis.</li> </ul>		3				3 cr
BA16BV09	<p>• <b>Clinical Microbiology</b> The students</p> <ul style="list-style-type: none"> <li>- are familiar with the biology of the different groups of microbes, and how these spread and develop resistance</li> <li>- are familiar with the structure and characteristics of the different microbes</li> <li>- understand the role of microbes in an infection</li> <li>- are familiar with the most common pathogens</li> <li>- command microbiological terminology.</li> <li>- are familiar with the main sources of information within microbiology</li> <li>- understand the importance of clinical microbiology within health care professions</li> <li>- are familiar with aseptic principles.</li> </ul>		3				3 cr
BA16BV10	<p>• <b>Immunology &amp; Patology</b> The students</p> <ul style="list-style-type: none"> <li>- are familiar with the function of lymphocytes in human immune defence</li> <li>- knows the process of immunisation</li> <li>- command immunological and pathological terminology.</li> <li>- are familiar with the acute inflammation, and changes in cells and tissues in disease</li> <li>- are familiar with the main sources of information within immunology and pathology</li> <li>- understand the importance of immunology within health care professions</li> </ul>		3				3 cr

BA14BV11	<p><b>• Molecular Biology</b> The students</p> <ul style="list-style-type: none"> <li>- are familiar with genes, gene expression and genetics</li> <li>- understand the role of genes in protein synthesis</li> <li>- master basic genetic calculations</li> <li>- master terminology of molecular biology</li> <li>- have knowledge of fundamental methods in molecular biology</li> <li>- are familiar with the main sources of information related to molecular biology</li> <li>- understand the importance of molecular biology within bioanalysis</li> </ul>		3			3 cr
BA14BI	<p><b>Bioanalysis</b> The students</p> <ul style="list-style-type: none"> <li>- are familiar with the analysis of bio molecules, genes, cells and tissues in connection to different diseases in organs, such as the liver, kidneys, lungs, pancreas and the thyroid digestive-, reproductive-, and circulation organs.</li> <li>- have profound knowledge about immunological methods</li> <li>- command the terminology of bioanalysis.</li> <li>- are familiar with the laboratory work process in its entirety, as well as its phases: the preanalytical, analytical and postanalytical.</li> <li>- are able to use central sources of information and scientific publications that are important for the profession.</li> <li>- are prepared to improve quality and consider sustainable development within bioanalysis.</li> </ul>		20	9		29 cr
BA18BI01	<p><b>• Biochemical Bioanalysis 1</b> The students</p> <ul style="list-style-type: none"> <li>- have fundamental knowledge about the analysis of biomolecules in connection to diseases in different organs, such as the liver, kidneys, lungs, pancreas and the thyroid, as well as digestive-, reproductive-, and circulatory organs</li> <li>- are familiar with common metabolic, secretory and hormonal disorders</li> <li>- are familiar with preanalytical factors within bioanalysis</li> <li>- have knowledge of different analytical methods within biochemical bioanalysis</li> <li>- understand the meaning of laboratory results within biochemical bioanalysis</li> <li>- master fundamental terminology of clinical biochemistry</li> <li>- are able to use central sources of information and scientific publications concerning methods, reference ranges, illness diagnostics and current research related to biochemical bioanalysis</li> <li>- are prepared to improve the quality of and consider sustainable development for bioanalysis</li> </ul>		3			3 cr
BA16BI02	<p><b>• Biochemical Bioanalysis 2</b> The students</p> <ul style="list-style-type: none"> <li>- have fundamental knowledge about the analysis of biomolecules in connection to diseases in different organs, such as the liver, kidneys, lungs, pancreas and the thyroid, as well as digestive-, reproductive-, and circulatory organs</li> <li>- are familiar with common metabolic, secretory and hormonal disorders</li> <li>- are familiar with preanalytical factors within bioanalysis</li> <li>- have knowledge of different analytical methods within biochemical bioanalysis</li> <li>- understand the meaning of laboratory results within biochemical bioanalysis</li> <li>- master fundamental terminology of clinical biochemistry</li> <li>- are able to use central sources of information and scientific publications concerning methods, reference ranges, illness diagnostics and current research related to biochemical bioanalysis</li> <li>- are prepared to improve the quality of and consider sustainable development for bioanalysis</li> </ul>		3			3 cr
BA14BI03	<p><b>• Microbiological bioanalysis 1</b> The students</p> <ul style="list-style-type: none"> <li>- have profound knowledge of microbiological methodology and clinical bacteriology</li> <li>- are familiar with the laboratory work process in its entirety, but also its phases: the preanalytical, analytical and postanalytical.</li> <li>- understand the role of laboratory results and result interpretation within microbiological bioanalysis.</li> <li>- command the terminology of clinical microbiology.</li> <li>- are able to use sources of information and scientific publications that are central to the field, concerning methods, reference ranges, illness diagnostics and current research within microbiological bioanalysis.</li> <li>- are prepared to improve quality and consider sustainable development within bio analysis.</li> </ul>		3			3 cr
BA14BI04	<p><b>• Physiological and neurophysiological Bioanalysis</b> The students</p> <ul style="list-style-type: none"> <li>- have fundamental insights into the laboratory examination process at physiological examinations of the body's organs and organ systems, such as the heart, lungs, the gastrointestinal channel, etc.</li> <li>- have fundamental insights into neurophysiological examinations of nerves, muscles, spinal cord and brain</li> <li>- have fundamental insights into patient care.</li> <li>- are able to use central sources of information and scientific publications concerning methods, reference ranges, illness diagnostics and current research within the area.</li> <li>- are prepared to improve quality and consider sustainable development within bioanalysis.</li> </ul>		3			3 cr
BA14BI05	<p><b>• Hematological Bioanalysis 1</b> The students</p> <ul style="list-style-type: none"> <li>- are familiar with the evaluation and assessment of peripheral blood smears in connection to different factors that affect the blood cell morphology, and to different illnesses (anemias, infections, other benign conditions, myeloproliferative and lymphoproliferative conditions, MDS and leukemias).</li> </ul>			3		3 cr

	<p>-are able to use central sources of information and scientific publications concerning methods, reference ranges, illness diagnostics and current research within the field.</p> <p>-are prepared to improve quality and consider sustainable development within bioanalysis.</p>						
BA14BI06	<p>• <b>Immunological Methodology</b></p> <p>The students</p> <ul style="list-style-type: none"> <li>- have profound knowledge about lymphocytes, antibodies and immunological methods that are used within clinical diagnostics.</li> <li>- understand the principles of the immunological methods.</li> <li>- command advanced terminology of immunology.</li> <li>- are able to use central sources of information and scientific publications concerning methods, reference ranges, illness diagnostics and current research within the field.</li> <li>- are prepared to improve quality and consider sustainable development within bioanalysis.</li> </ul>	5					5 cr
BA14BI07	<p>• <b>Nuclear Medical Bioanalysis and Radiation Safety</b></p> <p>The students</p> <ul style="list-style-type: none"> <li>- know the basic principles in radiation safety</li> <li>- know the basic principles in the use of a gamma camera, as well as other means of reproduction within nuclear medicine. They are also familiar with nuclear medical pathology.</li> <li>- know the basic principles of using radioactive substances and radiopharmaca.</li> <li>- have fundamental insights into patient care.</li> <li>- are able to use central sources of information and scientific publications concerning methods, reference ranges, illness diagnostics and current research within the area.</li> <li>- are prepared to improve quality and consider sustainable development within bioanalysis.</li> </ul>	3					3 cr
BA18BI08	<p>• <b>Molecularbiological Bioanalysis</b></p> <p>The students</p> <ul style="list-style-type: none"> <li>- are familiar with genetic disease, and the Finnish disease heritage</li> <li>- have insights into the analysis of genes and cells in relation to different organ diseases.</li> <li>- have profound knowledge about molecular biological methods</li> <li>- command the clinical terminology of molecular biology.</li> <li>- are able to use central sources of information and scientific publications concerning methods, reference ranges, illness diagnostics and current research within molecular biological bioanalysis.</li> <li>- are prepared to improve quality and consider sustainable development within bioanalysis.</li> </ul>		3				3 cr
BA18BI09	<p>• <b>Histopathological and Cytological Bioanalysis</b></p> <p>The students</p> <ul style="list-style-type: none"> <li>- are familiar with genetic disease, and the Finnish disease heritage</li> <li>- have insights into the analysis of cells and tissues in relation to different organ diseases.</li> <li>- have fundamental insights into cytology and histopathology</li> <li>- command the clinical terminology of histopathology and cytology biology.</li> <li>- are able to use central sources of information and scientific publications concerning methods, reference ranges, illness diagnostics and current research within cytological and histopathological bioanalysis.</li> <li>- are prepared to improve quality and consider sustainable development within bioanalysis.</li> </ul>		3				3 cr
Val	<p><b>Elective Studies</b></p> <p>De valfria studierna är studiehelheter eller kurser som den studerande kan välja fritt, men innehållet ska stöda den studerandes professionella tillväxt. De valfria studierna ska vara högskolestudier (Examensstadgan §9).</p>						3 cr
BA14ST	<p>• <b>Support Topics in Bioanalysis</b></p> <p>The students</p> <ul style="list-style-type: none"> <li>- have the ability to independently find new information.</li> <li>- have the ability to acknowledge and analyze problems of the professional field in new situations.</li> </ul>				3		3 cr
BA14ST01	<p>• <b>Support Topics in Bioanalysis</b></p> <p>The students</p> <ul style="list-style-type: none"> <li>- have the ability to independently find new information.</li> <li>- have the ability to acknowledge and analyze problems of the professional field in new situations.</li> <li>- are able to use their computer in their professional work.</li> </ul>						3 cr
PRA VÅ	<b>CLINICAL STUDIES</b>						76 cr
BA14ME	<p>• <b>Methodology</b></p> <p>The students</p> <ul style="list-style-type: none"> <li>- have fundamental skills in laboratory work, safety and basic methodology.</li> <li>- understand the importance of environmental responsibility and sustainable development.</li> </ul>	5					5 cr
BA16ME01	<p>• <b>Laboratory Methodology</b></p> <p>The students</p> <ul style="list-style-type: none"> <li>- master fundamental skills of laboratory work; laboratory equipment, safety and methodology</li> </ul>	5					5 cr

	<ul style="list-style-type: none"> <li>- are able to use basic laboratory equipment</li> <li>- are able to work in the laboratory carefully and systematically based on method descriptions and safety regulations</li> <li>- have fundamental insights into qualitative and quantitative analyses</li> <li>- are able to examine, analyze and document laboratory results</li> <li>- are able to calculate contents and manufacture solutions</li> <li>- have fundamental insights into organic synthesis, spectrometry, potentiometry and chromatography</li> <li>- consider occupational safety as well as sustainable development</li> </ul>					
BA14VB	<p><b>Basics of Care- and Bioanalytical Work</b> <i>The students</i></p> <ul style="list-style-type: none"> <li>- are able to create good patient relations and have skills in basic care.</li> <li>- are familiar with the role of laboratory examinations in the patient's comprehensive care.</li> <li>- have fundamental skills in the preanalytical phase of the laboratory examination process, as well as near patient analysis.</li> <li>- are familiar with quality development and management in clinical laboratory work</li> <li>- realize the importance of good co-operation within the caring community.</li> <li>- consider ethical issues and apply the ethical values that belong to the field.</li> <li>- consider sustainable development within the field.</li> </ul>	12				12 cr
BA14VB01	<p><b>• The Basics of Bioanalysis</b> <i>The students</i></p> <ul style="list-style-type: none"> <li>- are familiar with the role of laboratory examinations in the patient care.</li> <li>- have fundamental skills in the clinical laboratory examination process, especially the preanalytical phase (preparations, equipment, the process of examination and the specimen collection)</li> <li>- are familiar with quality development and management</li> <li>- realize the importance of good co-operation between the different units in the caring community as a prerequisite for the good quality of laboratory examinations.</li> <li>- consider security and occupational safety as well as sustainable development in the laboratory.</li> </ul>	6				6 cr
BA14VB02	<p><b>• Work Practice in Basic Clinical Care</b> <i>The students</i></p> <ul style="list-style-type: none"> <li>- are able to create good patient-relations and satisfy the individual patient's needs for basic care.</li> <li>- work according to aseptic principles.</li> <li>- realize the importance of good co-operation between the units of the caring community.</li> <li>- consider security and occupational safety as well as sustainable development in the work.</li> </ul>	3				3 cr
BA14VB03	<p><b>• The Basics of Bioanalysis - practice</b> <i>The students</i></p> <ul style="list-style-type: none"> <li>- have fundamental skills in the preanalytical phase that includes patient care, preparations, equipment and material, specimen types and collection methods</li> <li>- realize the importance of good co-operation between the different units in the caring community as a prerequisite for the good quality of laboratory examinations.</li> <li>- consider security and occupational safety as well as sustainable development in the laboratory.</li> </ul>	3				3 cr
BA18KM	<p><b>Clinical Laboratory Methodology</b> <i>The students</i></p> <ul style="list-style-type: none"> <li>- have fundamental skills of the laboratory examination process.</li> <li>- are able to use central sources of information and scientific publications concerning methodology.</li> <li>- are able to examine, analyze and document laboratory results.</li> <li>- have the ability to independently manage new situations that are part of the field.</li> <li>- consider security and occupational safety as well as sustainable development in the work.</li> </ul>	6	16			22 cr
BA18KM01	<p><b>• Biomethodology 1</b> <i>The students</i></p> <ul style="list-style-type: none"> <li>- have basic knowledge and skills in microscopy and cell biological, immunological and histological methods.</li> <li>- command the basic settings of the microscope.</li> <li>- are able to carry out cell biological, immunological and histological laborations according to method descriptions.</li> <li>- are able to use central sources of information and scientific publications concerning methods in biosciences.</li> <li>- are able to examine, analyze and document laboratory work.</li> <li>- consider security and occupational safety as well as sustainable development in the work.</li> </ul>	3				3 cr
BA18KM02	<p><b>• Biomethodology 2</b> <i>The students</i></p> <ul style="list-style-type: none"> <li>- have fundamental knowledge and skills in molecular biological methods and electrophoresis</li> <li>- are able to carry out molecular biological laborations according to method descriptions</li> <li>- are able to carry out agarose and polyacrylamide gel electrophoresis based on method descriptions</li> <li>- are able to use central sources of information and scientific publications with regard to electrophoretic</li> </ul>		4			4 cr



	<p>methods</p> <ul style="list-style-type: none"> <li>- are able to examine, analyze and document laboratory results</li> <li>- have the ability to independently manage new situations that are part of the field</li> <li>- have fundamental insights in the adherent quality assurance and quality improvement</li> <li>- consider occupational safety, as well as sustainable development in the work</li> </ul>						
BA18KM03	<p><b>• Biochemical Methodology</b></p> <p>The students</p> <ul style="list-style-type: none"> <li>- have fundamental skills in the process of laboratory tests when examining different human organ systems (kidneys, heart, liver, hemostatic mechanisms etc.)</li> <li>- have fundamental skills in patient examinations, such as EKG and spirometry.</li> <li>- are able to use central sources of information and scientific publications</li> <li>- are able to examine, analyze and document laboratory results.</li> <li>- have the ability to independently manage new situations that are part of the field.</li> <li>- have fundamental insights in the adherent quality assurance and improvement.</li> <li>- consider security and occupational safety, as well as sustainable development in the work.</li> </ul>	5					5 cr
BA14KM05	<p><b>• Mikrobiological Methodology</b></p> <p>The students</p> <ul style="list-style-type: none"> <li>- have basic knowledge and skills in microbiological methodology and understand its role in the patient's care.</li> <li>- are able to carry out microbiological taking of specimens, specimen culturing, colouring, identification and determination of resistance.</li> <li>- are able to use central sources of information and scientific publications concerning methods within clinical microbiology.</li> <li>- have the ability to examine, analyze and document laboratory results.</li> <li>- have the ability to independently manage new situations that are connected to the field.</li> <li>- have fundamental insights into the adherent assurance of quality and quality improvement.</li> <li>- consider security and occupational safety in the laboratory.</li> </ul>	5					5 cr
BA14KM06	<p><b>• Hematological Methodology 1</b></p> <p>The students</p> <ul style="list-style-type: none"> <li>- have basic skills in the phases of the laboratory examination process concerning the number of blood cells and morphology</li> <li>- are able to use central sources of information and scientific publications concerning methods in clinical hematology.</li> <li>- are able to examine, analyze and document laboratory results.</li> <li>- have the ability to independently manage new situations that are part of the field.</li> <li>- have fundamental insights into the adherent quality assurance and improvement.</li> <li>- consider security and occupational safety as well as sustainable development in the laboratory.</li> </ul>	3					3 cr
BA14KM07	<p><b>• Hematological Methodology 2</b></p> <p>The students</p> <ul style="list-style-type: none"> <li>- have basic skills in the laboratory examination process when investigating the number of blood cells and morphology.</li> <li>- are able to use central sources of information and scientific publications concerning methods in clinical hematology.</li> <li>- are able to examine, analyze and document laboratory results.</li> <li>- have the ability to independently manage new situations that are part of the field.</li> <li>- have fundamental insights into the adherent quality assurance and improvement.</li> <li>- consider security and occupational safety as well as sustainable development in the laboratory.</li> </ul>	2					2 cr
BA14KL	<p><b>Work Practice in Clinical Laboratory Work</b></p> <p>The students</p> <ul style="list-style-type: none"> <li>- have skills in the phases of the laboratory examination process, from the preanalytical to the postanalytical, when carrying out laboratory examinations, both concerning specimen collection and near patient examination.</li> <li>- have developed a critical and developmental grasp of the work.</li> <li>- consider security and occupational safety as well as sustainable development in the work.</li> </ul>		28	9			37 cr
BA18KL01	<p><b>• Work Practice in Clinical Laboratory Work 1</b></p> <p>The students</p> <ul style="list-style-type: none"> <li>- have skills in the phases of the laboratory examination process from the preanalytical to the postanalytical, when carrying out laboratory examinations, both in specimen collection and near patient examination.</li> <li>- are able to meet the need of the patient in the specimen collection process</li> <li>- are able to establish co-operative and harmonious working relationships with other health professionals</li> <li>- have the ability to independently evaluate and manage new situations that belong to the area.</li> <li>- have insights into quality assurance and improvement.</li> <li>- consider security and occupational safety as well as sustainable development in the laboratory.</li> <li>- have insights into ethical issues and base their work on work ethical values.</li> </ul>	4	6				10 cr
BA18KL02	<p><b>• Work Practice in Clinical Laboratory Work 2</b></p> <p>The students</p> <ul style="list-style-type: none"> <li>- have skills in the phases of the laboratory examination process from the preanalytical to the postanalytical, when carrying out laboratory examinations, both in specimen collection and near patient examination.</li> <li>- are able to meet the need of the patient in the specimen collection process</li> <li>- are able to establish co-operative and harmonious working relationships with other health professionals</li> <li>- have the ability to independently evaluate and manage new situations that belong to the area.</li> </ul>		10				10 cr

	<ul style="list-style-type: none"> <li>- have insights into quality assurance and improvement.</li> <li>- consider security and occupational safety as well as sustainable development in the laboratory.</li> <li>- have insights into ethical issues and base their work on work ethical values.</li> </ul>						
BA18KL03	<p><b>• Work Practice in Clinical Laboratory Work 3</b></p> <p><i>The students</i></p> <ul style="list-style-type: none"> <li>- have skills in the phases of the laboratory examination process from the preanalytical to the postanalytical, when carrying out laboratory examinations, both in specimen collection and near patient examination.</li> <li>- are able to meet the need of the patient in the specimen collection process</li> <li>- are able to establish co-operative and harmonious working relationships with other health professionals</li> <li>- have the ability to independently evaluate and manage new situations that belong to the area.</li> <li>- have insights into quality assurance and improvement.</li> <li>- consider security and occupational safety as well as sustainable development in the laboratory.</li> <li>- have insights into ethical issues and base their work on work ethical values.</li> </ul>			8			8 cr
BA14KL04	<p><b>• Work Practice in Clinical Laboratory Work 4</b></p> <p><i>The students</i></p> <ul style="list-style-type: none"> <li>- have skills in the phases of the laboratory examination process from the preanalytical to the postanalytical, when carrying out laboratory tests, both in the collection of specimens and near patient examinations.</li> <li>- have the ability to independently evaluate and manage new situations that belong to the area.</li> <li>- have insights into clinical laboratory work and have developed a constructively critical and developmental grasp of the work.</li> <li>- are prepared to carry out quality assurance and improvement.</li> <li>- understand the ethical guidelines that are fundamental to the work</li> <li>- are able to provide expertise and advise</li> <li>- consider security and occupational safety as well as sustainable development in the laboratory.</li> </ul>				9		9 cr
EXA	<b>Thesis</b>						15 cr
EXAMENSA	<p><b>Thesis</b></p> <p><i>The students</i></p> <ul style="list-style-type: none"> <li>- understand the meaning of scientific thinking.</li> <li>- are able to plan and carry out a scientific work.</li> <li>- have insights into the research process and problem solution.</li> <li>- are able to look for, retrieve and apply scientific publications.</li> <li>- command scientific documentation.</li> <li>- are able to present and defend a scientific work.</li> <li>- are able to analyze and evaluate an investigation.</li> <li>- are able to critically evaluate their own activities.</li> </ul>			9	6		15 cr
BA18EX01	<p><b>• Thesis 1</b></p> <p><i>The students</i></p> <ul style="list-style-type: none"> <li>- understand the meaning of scientific thinking.</li> <li>- are able to plan and carry out a scientific work.</li> <li>- have insights into the research process and problem solution.</li> <li>- are able to look for, retrieve and apply scientific publications.</li> <li>- command scientific documentation.</li> <li>- are able to present and defend a scientific work.</li> <li>- are able to analyze and evaluate an investigation.</li> <li>- are able to critically evaluate their own activities.</li> <li>- are able to produce research plan</li> </ul>			3			3 cr
BA18EX02	<p><b>• Thesis 2</b></p> <p><i>The students</i></p> <ul style="list-style-type: none"> <li>- understand the meaning of scientific thinking.</li> <li>- are able to plan and carry out a scientific work.</li> <li>- have insights into the research process and problem solution.</li> <li>- are able to look for, retrieve and apply scientific publications.</li> <li>- command scientific documentation.</li> <li>- are able to produce, present and defend a scientific work.</li> <li>- are able to analyze and evaluate an investigation.</li> <li>- are able to critically evaluate their own activities.</li> </ul>			6			6 cr
BA18EX03	<p><b>• Thesis and maturity test</b></p>				6		6 cr
<b>Optional Studies</b>							6 cr
BA14BA	<p><b>Optional Studies in Bioanalysis</b></p> <p><i>The students</i></p> <ul style="list-style-type: none"> <li>- have profound insights into one or several of the following: biochemical bioanalysis, microbiological methodology, clinical bacteriology, virology, mycology and parasitology, clinical physiology and nuclear medical bioanalysis, clinical hematology, hematological bioanalysis.</li> </ul>			3	3		6 cr
BA16BA01	<p><b>• Biochemical Bioanalysis 3</b></p> <p><i>The students</i></p>						3 cr

	<ul style="list-style-type: none"> <li>- have profound insights into biochemical bioanalysis.</li> <li>- are familiar with medication analysis, toxicological examinations and the determination of tumour markers, porphyrins, vitamins and tracers, and know the diseases connected to these examinations.</li> <li>- understand the role of laboratory results and result interpretation within biochemical bioanalytics.</li> <li>- command the terminology within clinical biochemistry.</li> <li>- are able to plan a clinical biochemical laboratory examination.</li> <li>- are familiar with the laboratory work process in its entirety, but also its phases: the preanalytical, analytical and postanalytical.</li> <li>- are able to use sources of information and scientific publications that are central to the field, concerning methods, reference ranges, illness diagnostics and current research within biochemical bioanalysis.</li> <li>- are prepared to improve quality and consider sustainable development within bioanalysis.</li> </ul>						
BA14BA02	<p><b>• Hematologisk bioanalytik 2</b></p> <p><i>The students</i></p> <ul style="list-style-type: none"> <li>- are familiar with the laboratory examination process in its entirety, but also the thorough phases: the preanalytical, analytical and postanalytical.</li> <li>- are familiar with laboratory examinations and are able to evaluate laboratory examination results related to anemias, blood diseases, coagulation disorders and blood transfusion control.</li> <li>- actively looks for and are able to assimilate new knowledge.</li> <li>- are able to work as an expert in the field.</li> <li>- are prepared to improve quality and consider sustainable development within bioanalysis.</li> </ul>						3 cr
BA14BA03	<p><b>• Physiological and Nuclear Medical Bioanalysis 2</b></p> <p><i>The students</i></p> <ul style="list-style-type: none"> <li>- are familiar with the laboratory examination process in its entirety, but also the thorough phases: the preanalytical, analytical and postanalytical.</li> <li>- have profound insights into patient-end examinations within clinical physiology and nuclear medicine, as well as the use of radioactive substances in the examinations.</li> <li>- are familiar with the care for patients in connection to examinations.</li> <li>- are able to work according to radiation safety regulations and are familiar with radiation safety directions.</li> <li>- are prepared to improve quality and consider sustainable development within bioanalysis.</li> </ul>						3 cr
BA14BA04	<p><b>• Microbiological Bioanalysis 2</b></p> <p><i>The students</i></p> <ul style="list-style-type: none"> <li>- have profound knowledge of microbiological methodology, virology, mycology and parasitology.</li> <li>- are familiar with the laboratory work process in its entirety, but also its phases: the preanalytical, analytical and postanalytical.</li> <li>- understand the role of laboratory results and result interpretation within microbiological bioanalysis.</li> <li>- command the terminology of clinical microbiology.</li> <li>- are able to use sources of information and scientific publications that are central to the field, concerning methods, reference ranges, illness diagnostics and current research within microbiological bioanalysis.</li> <li>- are prepared to improve quality and consider sustainable development within bioanalysis.</li> </ul>						3 cr