

***Programme-specific part to the programme
section of the student charter including the
education and examination regulations for the
bachelor of science programme of Health
Sciences¹***

(art. 7.13 and 7.59 WHW)

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Preamble

1. The rules and regulations in this programme-specific part apply to the full-time bachelor of science programme of Health Sciences.
2. Together with the General Section (TNW/23.906) this programme-specific part constitutes the programme part of the Student Charter including the education and examination regulations of the bachelor of science programme of Health Sciences of the Faculty of Science & Technology at the University of Twente.
3. The rules and regulations established by the Board of Examiners of the bachelor of science programme of Health Sciences regarding its duties and responsibilities according to article 7.12b WHW have been included in the 'Board of Examiners' Rules of the Health Sciences master's programme.

Date: July 11th, 2023 (translated: February 12, 2024)
Reference: TNW/23.913

¹ This document contains a translation of the earlier established programme-specific part (TNW/23.913) for the bachelor's programme of Health Sciences (Gezondheidswetenschappen). The Dutch version shall prevail in case of any misconceptions or ambiguities due to translation.

Article 1 Definitions

Terms used in these regulations, if those terms also appear in the Higher Education and Scientific Research Act (WHW), have the meaning given to them by that Act. In this appendix, the following definitions apply:

1. Forms of education:
 - a) Module education: education in which the topic is developed multidisciplinary and offered in educational units of 15 EC;
 - b) Lecture: a lecturer gives the outline of the block and global information about the topics to be studied;
 - c) Tutorial: student works under the guidance of the lecturer to deepen the knowledge acquired;
 - d) Response lecture: discussion of the self-study assignments and studied material;
 - e) Self-study assignment: student works independently on the acquisition of knowledge;
 - f) Projects: student designs a solution to a given problem/case.
 - g) Practicals: practice of practical skills.
2. Module component: part of a module (equivalent to unity of study) that is concluded with one or more tests.
3. Module coordinator: the person entrusted by the program management with the coordination of the module and the project.
4. Module examiner: In the case of a module consisting of one educational unit, the person appointed by the examination board for the purpose of determining the result of that module.
5. Unit of study: a unit of study that is concluded with one or more tests.
6. Unit of study: a part of the program as referred to in Article 7.3 (paragraphs 2 and 3) WHW. Each unit of study is concluded with an examination. In the Health Sciences program, each module is one unit of study of 15EC.

Article 2 Consecutive master's programme

The bachelor's program in Health Sciences and the master's program in Health Sciences are complementary. Successful completion of the bachelor's exam gives, among other things, access to the Health Sciences master's program of the Faculty of Science and Technology at the University of Twente. In addition, students have direct access to the Health Sciences master's program when they hold a certificate of admission to the program, issued by the admissions committee.

Article 3 Aims and attainments of the programme

The health scientist at the University of Twente makes healthcare more effective, efficient and sustainable by assessing, at the level of healthcare system, healthcare organisation, healthcare provider and client, processes and systems design, implement and evaluate. In doing so, the health scientist has the ability to evaluate, determine and advise on the value of technology within healthcare from a multidisciplinary perspective.

Competence	Indicators
1. Research The student develops new knowledge and insights to improve the effectiveness and efficiency of healthcare in a purposeful manner and with use of appropriate methodology.	1.1 The student is able to formulate healthcare-oriented problem statements and research questions and to draw up a research plan. 1.2 The student is able to apply concepts, models and theories within the subdiscipline(s)* of Health Sciences within a research project. 1.3 The student is able to collect and analyze qualitative and/or quantitative data and to interpret the findings in relation to the research question/problem statement. 1.4 The student is able to critically evaluate and report the findings and formulate recommendations for application or future research.
2. Advice The student is able to provide expert advice on organizational, policy, technological, and process related topics within the context of	2.1 The student can analyze situations and information using appropriate methodology, gather additional knowledge and make choices that lead to substantiated advice. 2.2 The student is able to approach a question from practice from the various sub-disciplines* within the domain of Health Sciences.

health care.	2.3 The student can formulate an opinion from different perspectives about the (added) value of a technology within healthcare.
3. Innovate The student is able to develop policy, products, services, technologies and/or organizational models that improve people's health (or the organization of care).	3.1 The student is able to translate research results into practical applications within the clinical, organizational and policy context of healthcare and to promote their implementation. 3.2 The student is able to actively contribute to the development and adoption of health technology in various phases. 3.3 The student acknowledges the importance of other disciplines and can actively involve them in the innovation process.
4. Leadership The student is capable to act and to involve others for the benefit of a common interest, by using his personal/professional qualities and by feeling responsibility.	4.1 The student manages and achieves goals by being aware of and using their own qualities and talents. 4.2 The student is able to reflect on personal functioning and professional actions. 4.3 The student shows respect for diversity and interest in other perspectives
5. Communicate The student has the ability to express needs, opinions, knowledge and information efficiently, clearly and adequately (appropriately) in dealing with others.	5.1 Students are able to correctly convey written information to others appropriate to the context in which this occurs. 5.2 Students are able to correctly convey oral information to others appropriate to the context in which this occurs. 5.3 The student listens to others and dares to express their own opinion or vision 5.4 The student is aware of their own non-verbal communication and is able to actively influence this
6. Collaborate The student can work together with other individuals or groups on a common result, even though this is not for a direct personal benefit.	6.1 The student is aware of their relationship skills and can use them effectively in collaboration with others. 6.2 The student is able to connect with people from other disciplines in healthcare and is aware of the different frames of reference from which situations can be viewed. 6.3 The student is able to give and receive feedback that contributes to the joint result. 6.4 The student is able to plan, organise, carry out and evaluate a project in cooperation with others.

* The subdisciplines within health sciences are: Health Technology Services Research, Human Resource Management, Psychology Health & Technology, Public Health, Health Economics, Biomedical Sciences, Philosophy of Science & Technology

Article 4 Admission to the study programme

Regarding admission to the program, as in accordance with sections 7.24, 7.25 and 7.28 HRA, there are no additional provisions.

Article 5 Language

1. The leading language of instruction in the Bachelor of Health Sciences programme is Dutch. Within a number of educational components, the leading language of instruction is English. If this is the case, it is indicated within the education catalogue (OSIRIS).
2. Within the programme, parts of the teaching are provided by English-speaking lecturers. Students are expected to have sufficient command of the English language in writing and in listening and speaking skills to participate in education, including tests in English and the delivery of products in the English language.
3. The report of the Bachelor assignment should be in Dutch or English. If it is agreed that the report will be in a language other than Dutch, this will be laid down at the beginning - when formulating - the Bachelor assignment. In the case of a report of the Bachelor assignment in a language other than Dutch, a summary in Dutch is obligatory.

Article 6 Design of education

1. The bachelor education programme consists of 12 educational units of 15 EC. Of the 12 educational units, modules 1 to 8 are regular modules, modules 9 and 10 form the minor of 30 EC. Module 11 and 12 constitute

the bachelor's graduation phase of 30 EC.

2. The pre-master's education programme consists of a maximum of 4 educational units of 15 EC. The pre-master's education programme is determined in advance by the admissions committee.
3. In each educational unit of 15 EC, the project forms the common thread. The units of study within the module shall support the solution of the assignment within the project. Examples of end products are written reports, final presentations, posters, debates and collective or individual oral presentations. For the supporting subject areas, written part and final tests usually apply.
4. The most common teaching methods are project work, lecture, tutorial, practicals, assignments and self-study.
5. General information on the content of the educational units can be found in the Education Catalogue in Osiris. Specific information (such as learning objectives per module unit, content of the module units and organisational information) can be found in the module manual after registration for the module.

Article 7 Bachelor of Health Sciences curriculum

The programmes below apply in the academic year 2023-2024. The bachelor's examination consists of the curriculum of the first, second and third year of study (B1, B2 and B3). All module components as shown below must be completed with at least a 5.5.

Year 1			
Module 1: Structure & Organisation of Healthcare (15EC)			
In this module, students learn to explore the concepts of health and chronic illness in relation to healthcare systems and organisation of care. Students unravel a chronic condition to understand the stratification of the issue and its multidisciplinary. For this purpose, knowledge is provided on the impact of a chronic condition on patients, on different care processes, health care systems and the organisation of care.			
Components		EC	% SBU
	Project: Zorgproces Chronische zieke	5	33
	Organisatie van zorg (Zorgorganisatie)	4	27
	Structuur van het zorgstelsel (Gezondheidsrecht, Health care systems, gezondheidszorg-economie)	4	27
	Methoden en technieken	2	13
Module 2: Health, illness and prevention (15EC)			
This module focuses on the prevention of chronic diseases. Students study the origins and consequences of a condition, the impact of the condition on people and society, and ways and means of preventing the disease. In doing so, students map out existing prevention policies. Based on pathophysiological, epidemiological, and ethical arguments, students make a proposal for a (new)prevention strategy for their chosen disorder. In this proposal, students include the possible impact of this prevention strategy on people and society and argue which ethical and social considerations play a role in assessing the desirability of a prevention strategy.			
Components		EC	%SBU
	Project: Gezondheid, ziekte en preventie	5	33
	Ethiek van preventie	1	7
	Introductie Epidemiologie	2	13
	Pathofysiologie	4	27
	Anatomie	1	7
	Celbiologie	2	13
Module 3: Health research (15EC)			
In the module, students learn to conduct healthcare research and relate the research to practice. To solve problems, innovation in healthcare is necessary, but it often does not happen by itself. The module therefore offers the student insight into the role of innovation within organisations, what change strategies there are and by what factors innovation and change strategies are influenced. Subsequently, insight is gained into the role of research in designing such innovations. The students learn to set up questionnaire research, conduct literature research and translate the results of a questionnaire survey into an innovation applied to a real healthcare issue.			
Components		EC	%SBU
	Project: Van Zorgprobleem tot zorgonderzoek	3	19
	Wetenschappelijke basisbeginselen	4	27
	Medische statistiek	4	27
	Veranderprocessen en management van innovatie in de zorg	4	27

Module 4: Quality management of healthcare (15EC)			
<p>Within this module, care is approached from different stakeholders (patient, care provider, management, health insurer, etc.) and there is a focus on the quality of care in terms of efficiency and effectiveness. The question "when is there optimal care?" is central to this module. What factors all play a role in being able to answer this question, and how do you then approach this for a specific care process? Can the question be answered unambiguously? The project that is the common thread within this module is titled: Optimising care processes (with technology support). Within this project, students analyse a (self-chosen) care process around a certain patient group from different perspectives (patient, care provider, care organisation, care system) around the themes central to this module. Central themes in this module are: Quality and Safety, Operations Management in Healthcare, Health Information Systems and Strategic Personnel Management.</p>			
Components		EC	%SBU
	Project: Optimalisatie van een zorgproces	2	13
	Kwaliteit en veiligheid	3	20
	Operations Management in de zorg	5	34
	Health Information Systems	3	20
	HRM personeelsmanagement	2	13
Year 2			
Module 5: Health Economics & Accounting (15EC)			
<p>In consideration of the difficulties for governments, health insurers, health care providers etc. of designing appropriate and cost-effective services for society, and given the goal of the BSc Health Sciences of training health improvers, the module Health Economics and Accounting will provide students with theoretical training in the economics of health and healthcare, economic evaluation and accounting as well as soft skills in program development and marketing. Combined with the creative and critical thinking of students, innovative services and / or "products" for health care related societal challenges will be developed. The project "Addressing health care challenges through social enterprise" involves developing a business case of a social enterprise providing (a package of) health services to address actual health care challenges faced by stakeholders from the field. The business case is aimed at designing evidence-based services which address real-world challenges in order to maximise health gains against acceptable investments. When developing their social enterprise, students will apply the knowledge they have learned during the courses of the module. These cover concepts such as cost effectiveness, quality-adjusted life years, return on investment, accounting, supply and demand, equity, etc. Students will further be confronted with implementation issues as well as critiques on the design of their service or products from the stakeholders.</p>			
Components		EC	%SBU
	Project: Cost-effective care for young adults at risk for depression	5	33
	Healthcare Economics and Financing	3	20
	Economic Evaluation in Health Care	4	27
	Financial and Management Accounting	3	20
Module 6: Clinical scientific research (15EC)			
<p>In this module, the student learns academic research skills that relate to problems in daily healthcare practice and clinical practice. The student learns to identify problems in the field of clinical practice and translate them into a medical scientific question. A number of new developments in the field of diagnosis and treatment of diseases are addressed. The student becomes familiar with epidemiological concepts and the specific methods and techniques of evidence-based research. The pitfalls that can occur in certain types of research and possible solutions to these are discussed. The student gains insight into univariate methods, including two-group testing and analysis of variance and regression, and insight into multivariate statistical methods, including multiple linear regression, logistic regression and analysis of survival data (Cox regression). By critically reading and commenting on medical scientific articles, the application of research methods and statistical analysis becomes clear. In conclusion, students learn to apply the whole by designing their own research proposal.</p>			
Components		EC	%SBU
	Project: Schrijven van een onderzoeksvoorstel	4	26
	Klinische epidemiologie	4	27
	Medische statistiek	4	27
	Diagnostiek en behandeling van ziekten	3	20
Module 7 Health technology & society (15EC)			
<p>A key aim of this module is to provide GZW students with knowledge and skills needed when dealing with the complexities of health technology development and implementation. Students gain a broad theoretical foundation on the development and implementation of health technology that can change behaviour. They also gain an understanding of philosophical approaches within engineering philosophy and engineering ethics and learn to apply them to health technology issues. In the project, different roles of the Health Scientist are practised; from giving policy advice and writing scientific papers, to dealing with the media and giving an elevator pitch to companies. After completing this module, the GZW student will be able to contribute with a critical-analytical attitude to the successful and responsible introduction of new health technology in the existing healthcare system.</p>			
Components		EC	%SBU
	Project: e-Health in context	4	27
	e-Health ontwikkeling in context	5	33
	Implementatie van gezondheidstechnologie	3	20
	Filosofische reflectie op gezondheid en technologie	3	20

Module 8: Healthcare Consultancy (15EC)			
Students learn to methodically approach a question within the domain of health sciences and formulate a recommendation for the client in collaboration with colleagues. They do this with respect for all stakeholders; financial, human resources, technical and legal frameworks, while also paying attention to implementation of a possible design. The research and design method here is characterised by the scientific approach. Ten organisations in the care domain have a health science issue. They would like to submit this issue to (future) health scientists at the University of Twente with the expectation that they will use their expertise to come up with an advice. At the start of the module, the clients will submit the issues to the health scientists. During this module, each project group will function as a healthcare consultancy engaged by the relevant healthcare organisation to provide an advice regarding the questions posed. In addition to an advice report, the client also expects an oral presentation of the advice and the process followed to arrive at the advice.			
Components		EC	% SBU
	Project: Consultants in de zorg	9	60
	Presenteren van een advies	2	13
	Reflectie en intervisie	4	27
Year 3			
Module 9 + 10: Minor			
Components		30EC	
	Stage*		
	Minor*		
Module 11 + 12: Bachelor thesis			
The bachelor thesis involves conducting a practice-based research project based on an assignment defined by a department and/or external client. An external client can be a healthcare institution, a technology company, a research institute or, for example, a municipality. The student writes (individually!) in a scientific manner a report of the research carried out. The thesis is assessed by two examiners and one of the examiners also fulfils the role of supervisor of the process. Supervision of the students is designed as much as possible within a graduation circle. A graduation circle is a guidance instrument in the form of a group of students who, together with one or more supervisors, organise and design the supervision of the thesis. The assessment of the bachelor thesis consists of the following three parts: assessment of the report, assessment of the process (professional development) and of the colloquium (thesis presentation).			
Components		30 EC	Percentage eindcijfer
	Inhoud en Thesis	18	60%
	Colloquium	6	20%
	Professioneel gedrag (proces)	6	20%

Article 8 Repair and validity of test results

1. If a module has not been completed sufficiently, the following rules shall apply to all modules within the Health Sciences programme with regard to the validity of test results: all test results shall have unlimited validity provided that
 - a. The weighted average of the results of the module components is at least a five and a half (5.5), whereby the assessment for the project is not taken into account when determining the average, and
 - b. the project has been completed with a pass.
2. A missing grade will be counted as a 1.0 when calculating the average.
3. Partial results that do not meet the conditions as mentioned in paragraph 1 will be cancelled at the end of the academic year.
4. The student may submit a written request to the examination board, stating reasons, to make an exception for him to the rules in sections 1 through 3.
5. The module team (examiners and module coordinator) may advise the examination board to deviate from article 8 section 1 if the average (article 8 section 1a) is between 5.00 and 5.49. Deviating from section 1 means that the student takes the results of the module components passed with a pass to the new academic year and only has to retake the module components that were not passed.
6. The student has the possibility to make use of the regularly scheduled resit (or second chance) within the regular planning of the module, i.e. one quarter. The programme does not allow an extra chance after positive completion of the module, module component or unit of study (≥ 6.0 six for module, ≥ 5.5 , five and a half for module component or unit of study).
7. The regular time for completing the bachelor's thesis is 840 hours (30 EC), which is 20 weeks for a full-time student. Deviating timetables for part-time students are only allowed when agreed in advance between the

student and the student's first supervisor and approved by the programme.

8. If the student fails to complete the Bachelor's thesis within the above-mentioned term, the first supervisor, in consultation with the second supervisor, may grant the student extra time for this purpose. The extra time to be granted is bound to the limit of 50% (10 weeks) of the regular duration of the thesis for a full-time student.
9. Only in exceptional cases is it possible to be granted postponement in addition to the extra time. If it is not possible for the student to complete the thesis within 20 weeks plus 10 weeks extra time, the student must submit a request for extra time to the Examination Board GZW-HS. The first and second supervisors must also agree to this request.

Article 9 Binding study advice

There are no additional requirements for the bachelor's programme in Health Sciences to the standard set for establishing a binding study advice in the General section of the OER of the Faculty of Science and Technology (article 6.2).

Article 10 Pre-master Health Sciences

1. The standard programme for premaster students usually consists of a programme of 10, 15 or 30 EC, depending on prior education. The maximum study load for the premaster programme consists of 60 EC.
2. The content of the premaster education programme is determined by the admissions committee based on the student's previous education and/or relevant work experience.
3. The admissions committee for the Health Sciences master's programme consists of the programme director and the study advisor.
4. The premaster education programme is laid down in the admission certificate.
5. The premaster education programme must be completed within one academic year.
6. For each educational component of the premaster, the student has a maximum of two test opportunities (in accordance with regulations for bachelor's students).
7. If a student does not complete the premaster programme within the term set for it (article 10.5), the student will be excluded from participating in the premaster programme for a period of three years.
8. The following components may be part of the established premaster programme:

Pre-master for HBO-students (30 EC)		
<i>Starting in September</i>		
Healthcare Economics & Accounting	15 EC	Module 5 (English)
Klinisch Wetenschappelijk Onderzoek	15 EC	Module 6 (Dutch)
<i>Starting in February</i>		
eHealth development in context	5EC	English
Economic analysis & evaluation in healthcare	5EC	English
Research methodology & descriptive statistics	5EC	English
Optimalisatie van zorg	15EC	Dutch

Pre-master for WO-students (15 or 30 EC)		
<i>Starting in September</i>		
Healthcare Economics & Accounting	15 EC	Module 5 (English)
And/ or: to be determined based on previous education	15 EC	
<i>Starting in February</i>		
eHealth development in context	5EC	English

Economic analysis & evaluation in healthcare	5EC	English
And/ or: to be determined based on previous education	5EC	English

Article 11 Quality Assurance

The quality of education is systematically monitored according to the Plan-Do-Check-Act (PDCA) cycle. The quality assurance system is described in the GZW-HS Quality Assurance Manual and consists of two parts:

1. The organisation of the faculty with all actors playing a role in management, organisation, development and implementation of the programme. Through a clear division of tasks and responsibilities and mutual coordination, the actors together ensure high-quality education.
2. The evaluation system that monitors the quality of the study programme and feeds the actors with information on quality and thus focuses on educational development and continuous quality improvement. In addition, the evaluation system also provides information for external accountability about the programme to bodies within the university (such as the Faculty Council, Dean, University Council and Executive Board) as well as outside the university (Ministry, Education Inspectorate, review committees and accreditation bodies).

A student complaints procedure is part of quality assurance.

Article 12 Transitional arrangement

If the bachelor curriculum as included in Article 7 of this program-specific section is modified, or if any of the other articles included in the general section or this section undergoes modification, a transitional arrangement shall be established and published by the program in accordance with Article 8.4 of the general section.

Article 13 Safety regulations

There are safety requirements for working in a laboratory, hospital and other health facilities. The student is obliged to take note of these regulations and comply with them.

Article 14 Sequence of educational units

1. Students wishing to start the minor in the 3rd year (B3) should have completed at least 90 EC of which 60 EC in the first year.
2. The student can start with the Bachelor assignment if modules 1 to 8 (120 EC) have been completed with a positive result. In cases in which the student does not meet this condition on the basis of missing 1 unit of study belonging to module 7 or module 8, the student may still start with module 11, in which case the student should be mindful of section 3 of this article.
3. The student may participate in the colloquium if modules 1 to 8 have been completed with a positive result.
4. At the student's request, the examination board may grant exemption from the conditions mentioned in this article, if strict application of the provisions therein would cause an unjustifiable delay in study progress.

Article 15 Study guidance

1. For the purpose of study guidance, the programme director appoints a study advisor. Their task shall be to advise students individually on all aspects of their studies on the one hand, and to inform the programme director on the students' study progress on the other.
2. During the first, second and third academic year, the study advisor keeps themselves informed of the progress of the students assigned to him/her and gives them solicited or unsolicited advice.
3. The study advisor shall advise the Examination Board, solicited and unsolicited, on decisions to be taken that concern individual students; in doing so, the study advisor and the Examination Board shall regard the information given by the students as confidential.
4. In addition to article 7.1 (studying with a disability) from the general part of the TNW EER, the dean has mandated the decision-making process for granting special facilities in the case of personal circumstances to the programme management. In practical terms, this means that the student will always first contact the

programme's study advisor for a request for special facilities.

Article 16 Amendment

1. In the event of amendments to this programme-specific part, the provisions of Articles 8.3 and 8.4 of the General Section shall apply.
2. The English version of the programme-specific part for the bachelor of health sciences is a translation of the Dutch version. In those cases where the translation has led to ambiguities in the regulations, the Dutch version is binding.

Article 17 Commencement

These Regulations come into force on the 1st of September 2023 and replace the Regulations of 1st of September 2022.

Adopted by the Faculty Board of the Faculty of Science and Technology, after having obtained the advice of the Faculty Council and the Programme Committee and after having obtained the consent of the Programme Committee on articles 3, 7 10 and 11.