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Program regulations for the minor degree program in informatics for students of the University of Zurich

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The changes between the different versions of these regulations are detailed in a separate document. (German only)

These program regulations are based on the framework ordinances for the Bachelor of Science (ROB)¹ and the Master of Science (ROM)² in informatics at the Faculty of Economics, Business Administration and Information Technology of the University of Zurich of 29 March 2004 and 10 April 2006. All references to paragraphs refer to these two documents.

¹ Framework ordinance for the Bachelor of Science (EN) = Rahmenordnung für den Bachelor of Science (DE), abbr. ROB

² Framework ordinance for the Master of Science (EN) = Rahmenordnung für den Master of Science (DE), abbr. ROM

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1 Objectives and content of the course of study

1.1 Basic information

In various faculties students can select informatics as a faculty-external minor subject in a Bachelor's as well as in a Master's program.

These program regulations govern the conditions and the content of programs offered for students in minor subjects. The following specializations are offered in minor subjects:

Programs at the Bachelor's level

- *Informatics*

In the informatics specialization, the students mainly deal with basic knowledge of informatics and advanced-level studies in elective fields of informatics.

- *Information systems*

In the information systems specialization, students mainly deal with informatics and their application in companies and administration.

Programs at the Master's level

- *Information systems*

At the Master's level, students in the information systems specialization focus on the management of an IT department. This concerns, among other things, the question of how incoming information can be used systematically and how companies' information systems can be developed and used in a targeted manner.

- *Software systems*

In the software systems specialization, students deal with the professional development of software systems. In addition to software technology itself, this also includes the systematic survey of requirements as well as the development and use of database systems.

- *Multimodal and cognitive systems*

In the multimodal and cognitive systems specialization, students learn to understand the behavior of living systems as well as model and visualize complex circumstances by building robots.

At the Bachelor's level, the programs offered are designed to familiarize students with the basic terms and methods of the selected specialization. At the Master's level, the minor subject offers students the opportunity to obtain in-depth knowledge in selected areas of informatics.

1.2 Program scopes offered

As a minor, informatics offers students at the University of Zurich study programs in the following scopes:

Table 1: Overview of the programs offered at the Bachelor's level

	NFB³ 60	NFB 30
Bachelor's level	60 credits	30 credits
<i>Informatics specialization</i>		
<i>Assessment level</i>	<i>21 credits</i>	<i>12 credits</i>
<i>Advanced level</i>	<i>39 credits</i>	<i>18 credits</i>
<i>Information systems specialization</i>		
<i>Assessment level</i>	<i>12 credits</i>	<i>12 credits</i>
<i>Advanced level</i>	<i>48 credits</i>	<i>18 credits</i>

Table 2: Overview of the programs offered at the Master's level

	NFM⁴ 30
Master's level	30 credits
<i>Information systems specialization</i>	<i>30 credits</i>
<i>Software systems specialization</i>	<i>30 credits</i>
<i>Multimodal and cognitive systems specialization</i>	<i>30 credits</i>

The number of credits indicated in **Table 1** and **Table 2** must be earned to pass the program.

Note: Students themselves are responsible for ensuring that the informatics minor with the selected scope and specialization can be credited towards the desired degree. Any approvals required by the faculty of the major subject must be obtained in due time.

³ Minor degree program, Bachelor's level (EN) = Nebenfach-Bachelorstudium (DE), abbr. NFB

⁴ Minor degree program, Master's level (EN) = Nebenfach-Masterstudium (DE), abbr. NFM

2 Admission

Students at the University of Zurich who select informatics as a minor must register for the selected program at the Faculty of Economics, Business Administration and Information Technology as students with an IT minor.

2.1 Prerequisites for programs at the Bachelor's level

Students studying informatics must be able to use a computer and have basic knowledge of word processing, spreadsheet processing and using the Internet (WWW, e-mail). They must also have an adequate (better: good) command of English. Touch-typing skills are also useful. Programming skills are not a prerequisite. It should be noted, however, that the programming training in the first semester of the minor degree program is demanding and requires a considerable amount of time, especially for students with no background knowledge of programming.

2.2 Prerequisites for programs at the Master's level

A program with 30 credits is offered at the Master's level. The prerequisite for admission to the Master's program is the successful completion of a Bachelor's program in informatics with at least 60 credits. Students who do not meet this prerequisite can be admitted to the Master's program subject to *conditions* upon petition. The *conditions* generally comprise all missing coursework and must be successfully completed before starting the Master's program. Petitions are to be directed to the examination delegate via the secretariat of the Department of Informatics.

2.3 Changing from major to minor

Students of informatics at the Faculty of Economics, Business Administration and Information Technology of the University of Zurich have the option to continue studying informatics as a minor when they transfer to a different faculty. Students must register for the minor in the usual way. Generally, studies start from the beginning after changing from major to minor. The transfer of previously completed coursework can be approved by the informatics department upon petition. When coursework is transferred from the major degree program, all creditable courses are transferred, including failed attempts. Coursework completed elsewhere cannot be transferred (cf. Section 9).

3 Credit system

3.1 Basic principles

All academic achievements are measured on the basis of the European Credit Transfer and Accumulation System (ECTS).

The subject matter is structured in coherent units in regard to content and time called modules. A number of *credits*, which corresponds to the average effort required to successfully complete the module, is awarded for each module the student passes (§ 5 ROB, § 6 ROM).

Intermediate and final qualifications are acquired by earning the number of credits required for the respective level, as a result of successfully completing modules and observing the conditions specified in the program regulations.

The credit system serves to record and accumulate credits for coursework completed at the University of Zurich as well as to transfer credits in the context of national as well as European student mobility.

3.2 Modules

The subject matter of the studies is structured in *modules*. There are compulsory, core elective and elective modules. *Compulsory modules* must be completed successfully. *Core elective modules* must be selected from a specified list. *Elective modules* can be freely selected.

Modules consist of one or more course formats. Such course formats include, for example: lectures, exercises, seminars, internships, independent study or seminar papers.

3.3 Assessments and credits

An explicit *assessment* must be obtained for each module. The form of the assessment depends on the course format(s) of the module and is determined by the responsible lecturer. These may be written or oral examinations, independent completion of exercises, writing a composition or a seminar paper, or presenting a lecture or similar; combinations thereof are also possible. No credits are awarded purely on the basis of attendance. (§ 5 ROB, § 6 ROM).

Each module is assigned a specific number of credits that reflects the average time expenditure required to successfully complete the module. One credit corresponds to a workload of 30 hours (for classroom instruction, independent study of academic literature, completion of exercises and assessments, etc.). Full-time students should earn an average of 30 credits per semester (§ 4 ROB, § 5 ROM).

3.4 Awarding of credits, grading, access to examination papers

There are graded and ungraded modules, whereby the majority of modules are graded. A graded module is considered passed if a grade of at least 4.0 has been achieved in the assessment. For ungraded modules, the assessment distinguishes only between "passed" and "failed" (§ 7 ROB, § 10 ROM).

If a module has been passed, the credits assigned for that module are awarded. Credits are awarded either completely or not at all.

All graded coursework is evaluated with grades between 6 (highest grade) and 1 (lowest grade). Quarter grades are permitted. Grades below 4 are considered failing. The grade values have the following meanings:

- 6 = excellent
- 5.5 = very good
- 5 = good
- 4.5 = satisfactory
- 4 = sufficient
- below 4 = fail

To ensure the secrecy of examination questions, the distribution of examination documents and the creation of copies or transcripts can be refused and the duration of inspection can be limited.

3.5 Transcript of records

After each semester, students receive a *transcript of records* with a list of all modules completed to date including credits earned and grades. It indicates the modules passed as well as those failed (failed attempts).

Any discrepancies regarding the new credits listed must be reported in writing to the Dean's Office within 30 days. The decision of the Dean's Office may be appealed to the Appeals Committee of the Cantonal Institutes of Higher Learning in Zurich.⁵

3.6 Documentation of modules

For each module, a *module description* is published in the UZH course catalogue published online (§ 5 ROB, § 8 ROM). The module description contains information on the following aspects:

- Title of the module
- Format of the module
- Number of credits to be earned
- Information on time and location as required
- Responsible lecturer
- Detailed information on the content, learning objectives and relevant course reading
- Prerequisites and background knowledge for attending the module

⁵ Be aware that the legal documents have to be in German.

- Registration and drop modalities
- Requirements for the assessment (what coursework is required to earn the credits for the module), including information on examination dates, etc.
- Indication of whether the module is graded
- Information on how the module is credited

3.7 Cancellation of announced modules

In the event of an insufficient number of students or as a result of force majeure (e.g. long absence of lecturers due to accident or illness), a module announced in the UZH course catalogue published online may be canceled. No claim may be made for the replacement for canceled modules.

4 Acquisition of assessments

In this section, the word "examination" refers to every prescribed component of an assessment (e.g. a written test, an oral examination, a seminar presentation, a seminar paper, etc.) (§ 14 ROB, § 14 ROM).

4.1 Registration for modules

Students must *register* in the online booking tool for each module (except for the project) for which they want to earn credits (§ 15 ROB, § 15 ROM). Modalities and registration deadlines are given in the module description in the UZH course catalogue published online.

The modules offered, the module descriptions as well as information on the module-booking process are published on the websites of the Department of Informatics, the Faculty of Economics, Business Administration and Information Technology or the University of Zurich (the links are given in Section 11).

Students may only register for a module if they meet the requirements listed for the module in the module description. In cases of hardship, the examination delegate may authorize exceptions.

Students who want to sign up for individual modules at another institute of higher education must register in advance at the secretariat of the informatics department. External modules can only be transferred in the minor degree program as elective informatics modules in the core elective area.

4.2 Dropping modules and withdrawal

Dropping modules without stating reasons is only possible until the drop deadline listed in the module description in the UZH course catalogue published online (§15 ROB, § 15 ROM).

If a candidate is prevented from attending an examination for a compelling reason that did not exist and was not foreseeable at the time of the drop deadline, then he or she must immediately notify the secretariat of the informatics department and submit a written drop petition. If such a reason for prevention occurs directly before or during an examination, the candidate must immediately inform the department secretariat, or in the case of examinations in

progress, the examiner (in the case of written tests, the proctor) of the withdrawal in writing. The subsequent assertion of reasons for withdrawal is excluded (§ 16 ROB, § 16 ROM).

If a candidate fails to appear at an examination or does not continue an examination that has started without an authorized drop or compelling reasons for prevention or cancelation, the examination in question is considered to have been failed (§ 17 ROB, § 17 ROM).

The drop petition or withdrawal notice must be submitted to the secretariat of the informatics department with the corresponding documentation within five business days (§ 16 ROB, § 16 ROM). In justified exceptional cases, the examination delegate can accept petitions submitted late.

If medical reasons are claimed, a medical certificate is required. In cases of doubt, the informatics department may consult a physician of its choosing for evaluation.

4.3 Failure and repetition of modules

A failed module can be *repeated* as long as it is still among the courses offered. There is no right to an immediate repetition after a failed assessment.

In the case of core elective and elective modules, *another* module may also be completed in place of a module that has been failed, as long as the minimum required number of credits can still be earned in the respective core elective or elective areas.

The repetition of a module that has been *passed* is *not* possible; nor can modules that have similar or identical content to a module that has been passed be credited for the minor degree program. The only exception is the repeated completion of modules that can no longer be credited towards the degree for time reasons (cf. Section 8.2).

There is no limit to the number of times that a module that has been failed can be repeated. There is, however, an *upper limit* to the *total number of failed attempts* (cf. Section 8.4). Each failed assessment counts as a failed attempt. The project may only be repeated once. Failing the project does not count as a failed attempt.

4.4 Switching between programs

It is generally possible to change from one program to another during one's studies, e.g. from a major to a minor or from an NFB 30 to an NFB 60. At the same time, all admission requirements for the new program must be fulfilled.

The coursework completed in the old program can be credited to the newly selected program upon petition to the department. All coursework, including failed attempts, is credited, as long as there is an equivalent in the new program. Petitions are to be directed to the examination delegate via the secretariat of the Department of Informatics.

4.5 Overlap between programs

With certain major and minor subject combinations, it is possible for a module to be a compulsory course in more than one program. In such cases, another course must be substituted for the module in one of the programs.

Generally, a replacement module should be completed in the smaller program. The substitution requires prior authorization by the examination delegate, unless regulations have been adopted for specific overlaps of programs in the regulatory statutes.

4.6 Resources, cheating on examinations

The resources allowed during examinations are listed for each module in the UZH course catalogue published online or on the module websites.

If it is determined that a candidate is cheating or has cheated during an examination⁶, the examination in question will be failed. Transcripts of records and documents that have already been issued are declared invalid. The University of Zurich reserves the right to take disciplinary action. If a title is awarded on the basis of such an examination, it will be revoked. Any diplomas will be confiscated (§ 21 ROB, § 20 ROM).

Cheating on examinations includes, for example, someone using unauthorized aids or communicating with third parties without permission during an examination. Cheating on examinations also includes any form of plagiarism.

The Faculty Board decides whether disciplinary proceedings should be requested.

4.7 Petitions for reconsideration and appeals

Petitions for reconsideration of the grading of examinations or non-admittance to examinations must be directed in writing to the examination delegate via the secretariat of the informatics department within 30 days of the results becoming known.

Appeals are to be directed to the Appeals Committee of the Cantonal Institutes of Higher Learning in Zurich (Walcheter, 8090 Zurich) within 30 days of receipt of an appealable decision.⁷

4.8 Examination language

Examinations are always to be conducted in the language in which the corresponding module was taught. German, English, French or Italian can be used instead of the intended language in agreement with the lecturer of the respective module.

Independent papers are to be composed in German or English. The examination delegate may authorize composition in a different language (§ 19 RO).

⁶ Examinations also include items of work such as homework and seminar papers, if they are included in the course evaluation.

⁷ Be aware that the legal documents have to be in German.

5 Study programs at the Bachelor's level

Tables 3 and 4 show the structure of the minor degree program in informatics for the two specializations informatics and information systems as a first minor (NFB 60) and as a second minor (NFB 30).

Table 3: Programs at the Bachelor's level – informatics specialization

Informatics specialization	NFB 60	NFB 30
Modules	Credits	Credits
Assessment level	21	12
Informatics I	9	9
Formal Methods for Computer Science I	3	3
Informatics II	9	-
Advanced level	39	18
Informatics II a	-	3
Modules from the core elective area ⁸	12	12
Informatics seminar	3	-
Elective informatics modules ^{9, 10}	12	-
Project	12	3
Total required	60	30

⁸ The modules that belong to the core elective area are listed in Section 7.1.

⁹ Or additional modules from the core elective area.

¹⁰ Elective informatics modules are understood here to include all modules in the field of information systems as well as relevant informatics modules of the Faculty of Science as well.

Table 4: Programs at the Bachelor's level – information systems specialization

Information systems specialization	NFB 60	NFB 30
Modules	Credits	Credits
Assessment level	12	12
Informatics I	9	9
Informatics for Economists I ¹¹	3	3
Advanced level	48	18
Compulsory area		
<i>Informatics IIa</i>	3	-
<i>Informatics for Economists II</i>	-	3
<i>Informatics for Economists III</i>	3	3
<i>Database Systems</i>	6	-
<i>Software Engineering</i>	6	-
<i>Business Informatics</i>	6	6
Core elective area		
<i>Informatics seminar</i>	0	0
<i>Project</i>	12	3
Elective area		
Elective informatics modules ¹²	12	3
Total required	60	30

For degree programs comprising two minors, it is recommended that the informatics minor with the information systems specialization be combined with a minor in business administration or banking and finance.

5.1 Assessment level

5.1.1 Content and scope

The courses of the assessment level begin each fall semester and last for two semesters. The credits to be earned are listed in Tables 3 and 4.

5.1.2 Acquisition of assessments

An examination is offered for each module in the immediately following "semester break" for the acquisition of assessments at the assessment level.

5.1.3 Criteria for passing the assessment level

When a student has earned the required credits in the modules of the assessment level, he or she has *passed* the assessment level and may continue to study in the corresponding minor without restrictions.

¹¹ Course from the assessment level of economics and business administration (Program regulations for the Bachelor of Arts (BA) in economics and business administration at the University of Zurich, of 19 April 2006).

¹² Elective informatics modules are understood here to include all modules in the area of information systems as well.

When a student has undertaken *more than the maximum permissible number of failed attempts* (cf. Table 6 in Section 8.4) in modules of the assessment level, he or she has irrevocably failed the assessment level and is expelled from further studies in informatics at the University of Zurich.

5.1.4 Completion of the assessment

The assessment level for the minor is completed when all module assessments have been passed and the required credits from the prescribed modules of the selected program and specialization in the assessment level have been earned.

5.2 Advanced level

Students who have completely passed the assessment level (cf. Section 5.1.3) are admitted to the advanced level.

6 Study structure at the Master's level

Table 5 shows the modules of the minor degree program within a Master's program.

At the Master's level, students can design their studies according to their individual interests within the selected specialization (see Section 1.1).

Table 5: Programs at the Master's level

	NFM 30
Modules	Credits
Core elective area in the selected specialization	12
Project	9
Elective informatics modules	6
Seminar	3
Total required	30

7 Course types

7.1 Modules in the core elective area of informatics

The core elective area comprises modules concerning central questions in informatics.

7.1.1 Bachelor's level core elective area

At the time of issue of these program regulations, the core elective area comprises the modules listed below. Any changes will be announced on the websites of the informatics department.

- Database Systems
- Distributed Systems

- Formal Methods for Computer Science I & II, to the extent not already covered in the assessment level
- Informatics IIb, to the extent not already covered in the assessment level
- Communication Systems
- Multimedia Systems
- Software Engineering
- Systems Software
- Business Informatics

7.1.2 Master's level core elective area

In the core elective area of the minor subject, all modules of the corresponding core elective area of the Master's program of the corresponding specialization can be selected.

7.2 Elective informatics modules

The following can be selected as elective informatics modules:

- Modules from the core elective area that have not yet been completed
- All modules that can be selected as elective informatics modules in the Bachelor of Science or Master of Science program in informatics, as long as the background knowledge or prerequisites for the respective modules have been completed
- Only modules that correspond to the respective program level (Bachelor's or Master's level) can be credited.

7.3 Seminars

Attending an informatics seminar requires background knowledge in the respective field. Therefore, it is only possible to attend an informatics seminar if

- the introductory module in the subject area of the seminar has already been attended, or
- this module is attended simultaneously, or
- the subject matter presumed in the seminar is acquired independently.

Seminars are graded.

7.4 Project

The project is a module in which students independently acquire specialized knowledge in the field of informatics or information systems. The project generally comprises work with academic literature as well as the solution of a problem. The problem can be solved in group work or in connection with the research activity of a study group in the Department of Informatics. The project may create a link to the student's major.

It must be completed within six months. A paper is written as an assessment. The department issues a separate bulletin on the details, especially registration and processing deadlines, as well as the format and scope of the paper.

The grade of the project is based on the evaluation of the paper. Depending on the program, the scope may comprise 3, 6, 9 or 12 credits. The project may only be repeated once, whereby a new topic must be selected.

8 Graduation

8.1 Registration for graduation

The minor degree program has been successfully completed when all compulsory and elective modules have been completed and passed and the total number of required credits has been earned.

The department secretariat confirms the final degree in the minor to the Dean's Office of the major and notifies the Dean's Office of the grade in the minor.

8.2 Validity of credits

Only modules that have been passed within the last five years may be credited towards the final degree. The deadline is calculated from the time difference between the semesters in which the respective first and last creditable modules were attended.

In justified cases, the examination delegate may authorize credits earned at an earlier time to be credited towards the degree. In any case, the application must be submitted before the deadline has passed.

8.3 Grade

The grade results from the average of the individual grades of all graded and creditable modules that have been passed in the respective minor degree program of the corresponding specialization, weighted with the respective number of credits. Modules that are not required for the final degree are not included in the grade.

The assessment level is not taken into account in calculating the grade for the minor subject at the Bachelor's level.

8.4 Exclusion from the study program

If a student has

- irrevocably failed the assessment level (Section 5.1.3) or
- exceeded the maximum permissible number of failed attempts in modules that are creditable for the advanced level (and do not belong to the assessment level) (see Table 6) or
- not passed the project even at the second attempt

then he or she is irrevocably expelled from informatics studies at the University of Zurich.

In this case, the transcript of records for the semester in which the last assessments were completed serves as attestation of the coursework completed.

Table 6: Overview of the maximum permissible number of failed attempts

Bachelor's program		
<i>Assessment level</i>	All programs	maximum of 3 failed attempts
<i>Advanced level</i>	NFB 60 NFB 30	maximum of 5 failed attempts maximum of 3 failed attempts
Master's program	NFM 30	maximum of 4 failed attempts

8.5 Applicable program regulations

The requirements of the program regulations that were in effect at the time of registration for the first assessment in the minor degree program in informatics at the University of Zurich apply to graduation.

However, this only holds true when the minor degree program is completed within five years after this point in time. If the degree program is completed at a later date, the requirements of the program regulations valid at the time of registration for graduation from the minor degree program in informatics apply. The right to transitional regulations to the contrary is reserved when new examination or framework ordinances are issued.

9 Transfer of external credits

Credits earned at other institutions before the minor degree program was started at the informatics department may not be transferred. External modules can only be transferred in the minor degree program in the core elective area as elective informatics modules (see Section 4.1).

10 Transitional regulations

Students who started the Bachelor's level minor degree program with a scope of 21 or 45 credits before the fall semester of 2010 have to complete it until the end of the fall semester of 2013.

The present program regulations have applied to students at the Faculty of Arts since the winter semester of 2006/07. For students at other faculties, this revised version went into effect in the fall semester of 2007.

Assessment modules will be credited accordingly to students who passed the assessment modules before the beginning of the fall semester of 07/08 and are new in the advanced level.

Students at the Faculty of Arts who attended the first creditable module for the minor degree program in informatics before the winter semester of 2006/07 may still complete the minor degree program according to the old regulations (Program regulations for the minor degree program in informatics for students at the Faculty of Arts of the University of Zurich, Version 1.1 of 20 April 2005, as well as previous guidelines with an oral final examination as well as a three-day-long written homework in the first minor subject) if they completed their first assessment no later than 31 December 2009. Students who will not have completed their assessments by 31 December 2012 will be transferred to the Bachelor's degree program. The department will issue transitional regulations for compulsory courses under old regulations (see above) that will no longer be offered in the future.

NOTE: Students at the Faculty of Science who attended the first creditable module for the minor degree program in informatics before the fall semester of 2007 may still complete the minor degree program according to the regulations of the Faculty of Science or its transitional regulations. The Faculty of Science regulates the details of this.

Alternatively, these students can also switch to this degree program according to the present program regulations upon petition. However, only the course attendance verifications and modules that directly and completely correspond to an assessment in the subjects of these program regulations may be credited. Ungraded assessments are not credited (exception: seminar assessments). Students making use of this option forfeit the right to a final degree according to the old regulations.

11 Information offices

- **Secretariat of the informatics department**
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- **Websites of the informatics department**
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www.ifi.uzh.ch/teaching/studieninteressierte/
www.ifi.uzh.ch/bsc/
- **Website of the Faculty of Economics, Business Administration and Information Technology**
www.oec.uzh.ch
- **Website of the University of Zurich**
www.uzh.ch
- **Student Administration Office**
Main building of the University, Rämistrasse 71, 8006 Zurich
www.uzh.ch/studies_en.html
- **Fact sheet of the University of Zurich on plagiarism**
www.lehre.uzh.ch/index/LK-Plagiate-Merkblatt.pdf (German only)