

Study Plan for the Specialized Master's Program in Artificial Intelligence in Medicine at the Faculty of Medicine

Dated January 20, 2021 (as of January 1, 2025)

The Faculty of Medicine,

based on Art. 44 of the Statutes of the University of Bern dated June 7, 2011 (University Statute, UniSt) and on the Regulation on Studies and Evaluations for the Specialized Master's Program in Artificial Intelligence in Medicine at the Faculty of Medicine (RSL AIM) dated January 20, 2021,

issues the following study plan:

I. General

SCOPE

Art. 1 This study plan applies to all students enrolled in the Faculty of Medicine (Faculty) in the Artificial Intelligence in Medicine (AIM) program or those who are receiving credits from AIM as part of other study programs.

ECTS CREDITS AND LEARNING OUTCOMES

Art. 2 The number of ECTS credits and the learning outcomes for individual courses are defined in the electronic course catalogue and in the appendix.

EVALUATIONS

Art. 3 ¹ The course instructor will provide the objectives, content, timing, and type of evaluation before the start of the course in the electronic course catalogue.

² Prerequisites for participating in evaluations are specified in the appendix.

EVALUATION

Art. 4 ¹ Grading is governed by Art. 38 of RSL AIM.

² Ungraded evaluations are assessed according to Art. 38, Paragraph 2 of RSL AIM.

³ The electronic course catalogue specifies which evaluations are graded.

REPEAT OF EVALUATIONS COMPENSATION

Art. 5 ¹ Failed evaluations may be repeated once. Repeat exams are generally conducted in the following semester and in the same format as the corresponding regular evaluations. The responsible examiners may decide to replace a written exam with an oral exam lasting between 15 and 60 minutes. In such

cases, the change in the examination mode must be communicated to the students at least one week before the exam. Further details are governed by Art. 41 of RSL AIM.

² All evaluations must be successfully completed. Compensation is not permitted.

II. Organisation

PROGRAM MANAGEMENT

Art. 6 The program management consists of the head of the program and a co-head.

DUTIES OF THE PROGRAM MANAGEMENT

Art. 7 The program management, supported by the study coordination, undertakes the following tasks:

- a* It monitors the implementation of the study plan, reviews the strategic direction of the study programs, and addresses any issues that arise in the execution of the programs.
- b* It drafts the study plan and any amendments to the study plan for the faculty.
- c* It coordinates the modules and courses of the study programs.
- d* It organizes the final examinations.
- e* It prepares the list of supervisors for Master's theses (supervisors or Master's thesis advisors) for the faculty.
- f* It makes recommendations regarding the admission of external examiners and supervisors of Master's theses.

STUDY COORDINATION

Art. 8 ¹ The program management appoints one or more study coordinators.

² The study coordination is subordinate to the program management.

DUTIES OF THE STUDY COORDINATION

Art. 9 ¹ The study coordination has the following tasks:

- a* It advises students, together with the program management, on all matters related to the Master's program.
- b* It is responsible for addressing issues in the study and evaluation process by forwarding contentious questions to the relevant bodies.
- c* It performs the tasks delegated by the program management and the study committee.

² In fulfilling its tasks, the study coordination is bound by the decisions of the Dean and the study committee.

ADMISSIONS COMMISSION

Art. 10 ¹ The program management selects the admissions commission from members of the Faculty of Medicine and the two competence centers involved in the program: the ARTORG Center for Biomedical Engineering Research and the Center for Artificial Intelligence (CAIM).

² Rejection decisions are made by a decree from the Dean.

III. Studies

STUDY GOALS

Art. 11 Graduates will be able to:

- Utilise their comprehensive knowledge in machine learning throughout the entire lifecycle of medical development to solve clinical problems. This includes design development, construction monitoring, and validation of intelligent systems for medical use and application.
- Understand, interpret, and evaluate both scientific literature and current academic and commercial approaches in the field of machine learning for clinical applications.
- Assess the technical value of a clinical AI system and understand the system's classification within regulatory, medical-ethical, and medical-legal contexts.
- Apply strategies for lifelong learning and key skills for participation in advanced academic programs or for careers in research or industry.

ADMISSION REQUIREMENTS

Art. 12 ¹ The admission requirements and additional qualifications are defined in Art.s 12 and 13 of RSL AIM.

² Applicants with a Bachelor's degree from a Swiss university in the following fields of study with a minimum grade of 5 may be admitted:

- a Biomedical Engineering [*amendment 23.10.2024*]
- b Electrical Engineering
- c Computer Science
- d Mechanical Engineering
- e Mathematics
- f Physics

³ Additionally, admission to the program will be granted to those who [*amendment 14.12.2022*]

- d Hold a Bachelor's degree from a Swiss university with an unrounded grade of at least 4.5 in one of the fields listed in Paragraph 2, and
- e Demonstrate their suitability for the program in a standardized interview.

⁴ Applicants with a foreign educational background must present a language test at level C1 of the Common European Framework of Reference with the corresponding minimum score upon application, specifically a Cambridge Certificate, a valid TOEFL, or IELTS test. TOEFL, IELTS, or C1 Advanced tests must not be older than two years at the time of application; a C2 Proficiency test must not be older than five years. Tests older than this will not be accepted.

Language test

Minimum result

TOEFL iBT	100
IELTS Academic	7.0
C1 Advanced (CAE)	Grade C
C2 Proficiency (CAE)	pass

⁵ Exemptions from the English test are possible for students who have completed their studies within a linguistic community where English is the predominantly spoken language.

⁶ The Admissions Commission assesses applicants based on various criteria (e.g., the classification or final grade of the Bachelor's degree, motivation, recommendation letters, etc.).

⁷ After consulting with the program management, the Admissions Commission requests the Dean's Office to admit students to the Master's program. Negative decisions are issued in the form of an appealable decree from the Dean.

⁸ The Admissions Commission defines additional requirements and requests these from the Dean's Office.

⁹ Additional requirements in the form of conditions and/or stipulations according to Art. 13 of RSL AIM are defined on an individual basis.

INTERVIEW

[amendment 14.12.2022]

Art. 12a [amendment 14.12.2022] ¹ The standardized interview serves as an additional basis for the Admissions commission, alongside the written application documents, to assess the personal and professional suitability of the applicants for the program.

² The following competencies are evaluated:

- a Methodological competence (e.g., intellectual competence, learning ability, action capability),
- b Subject specific competence,
- c Self-competence (e.g., self-reflection, motivation).

³ The interview is conducted by the Admissions Commission or by designated faculty members and another person appointed by the Admissions Commission.

⁴ The interview is conducted in English and is documented.

PROGRAM REQUIREMENTS

Art. 13 The study program consists of the following requirements:

- a Compulsory components totalling 88 ECTS credits:
 - Module AI (20 ECTS credits)
 - Module Medicine (18 ECTS credits)
 - Module Applications (20 ECTS credits)
 - Master's Thesis (30 ECTS credits)
- b Elective compulsory components totalling 20 ECTS credits:
 - Module Foundation
- c Elective components totalling 12 ECTS credits

Amendments

Came into effect

Amendment of 14 December 2022, in force on 1 February 2023

Amendment of 23 October 2024, in force on 1 January 2025

NOT LEGALLY BINDING