

Study programme

Faculty: Faculty of Pharmacy

Field of study: Pharmacy

Level of education: integrated master's studies

Profile of education: general academic

Form of study: full time

Cycle of education: 2026-2032

Basic information

1.	Name of the faculty	Faculty of Pharmacy
2.	Name of the field of study	Pharmacy
3.	Professional title awarded to graduates	Master of Pharmacy
4.	Level of education*	Integrated master's studies
5.	Profile of education**	general academic
6.	Form of study***	full time
7.	Number of semesters	11
8.	a) the number of ECTS credits required to complete the program, as specified in the educational standard	300
	b) number of ECTS credits required to complete the programme at MUG	360
9.	total number of class hours	5300
10.	Discipline (or disciplines) to which the field of study is assigned, with an indication of the leading discipline	pharmaceutical sciences

* first-cycle studies/second-cycle studies/integrated master's studies

** general academic/practical

*** full-time/part-time

The study programme in the field of pharmacy, implemented at the Medical University of Gdańsk, was developed based on the University's mission, which is modern education and research for health and the development of medicine. This mission is directly reflected in the assumptions and structure of the study programme. All activities undertaken with regard to education in the field of pharmacy are aimed at ensuring high-quality education, in accordance with the requirements specified by the relevant level of the Polish Qualifications Framework and the standard of education, whose learning outcomes relate to the discipline of pharmaceutical sciences.

The study programme for the field of pharmacy reflects the main strategic goals of the University – in particular in terms of the quality of education, social responsibility, innovation and internationalisation. It meets the expectations placed on a university that educates independent and creative professionals. The study programme reflects the concept of educating pharmacists as specialists in the scope of drug sciences, including drug design, manufacture, quality control, modes of action, distribution and rational and safe use. The study programme also includes the development of social attitudes in accordance with the Code of Ethics of Polish Pharmacists,

including awareness of continuing education and work in interprofessional therapeutic teams for the benefit of the patient.

The concept of education in the field of pharmacy was developed by the Commission for Study Plans and Programmes with the involvement of academic teachers, the Employers' Council and students. The programme integrates content from the fields of chemistry, biology and medicine with subject-specific courses, providing comprehensive theoretical and practical preparation for the profession of pharmacist. The idea behind the programme is therefore for students to apply the knowledge they have acquired in the context of real professional practice, preparing them to work as pharmacists in a variety of pharmaceutical environments. The education also takes into account the development of social, ethical and professional competences necessary to responsibly perform public trust functions, cooperate in an interdisciplinary team and conduct health-promoting and preventive activities. The study programme is based on the assumption of educating professionals who, in their professional work, are guided by the well-being of the patient, show respect for their rights and understanding in situations of illness and recovery.

The university provides students with opportunities for comprehensive professional and personal development through access to modern teaching methods (e.g. a training pharmacy store), advanced practical education and an environment conducive to learning and teamwork. Students have access to modern laboratories, equipment and software, which promotes the development of practical skills in line with new trends in pharmacy. Due to its long-standing and close cooperation with Polpharma S.A. Pharmaceutical Works and the University Clinical Centre in Gdańsk, the Faculty of Pharmacy at the Medical University of Gdańsk enables pharmacy students to complete part of their classes and professional internships at the country's leading pharmaceutical company and one of the most modern hospital pharmacies in Europe. In addition, the study programme in the field of pharmacy includes classes in hospital wards conducted by clinicians and covers practical training in protective vaccinations in cooperation with nurses. This interdisciplinary approach aims to teach students how to make informed pharmacotherapeutic decisions and act in situations requiring professionalism, cooperation with other healthcare specialists and high professional standards. The study programme is tailored to the requirements and needs of the market, both in terms of acquiring professional competences and in the context of personal development.

The strategy of the MUG emphasises the development of scientific research and the implementation of innovations in the healthcare sector. The study programme in the field of pharmacy at the MUG is fully consistent with this assumption, as the University enables students to participate in research projects concerning, among others, new pharmaceutical technologies,

drug analysis and innovative therapies. The Faculty of Pharmacy enables students to participate in student research clubs, scientific projects, mentoring programmes, as well as educational initiatives in the local community, e.g. as part of the activities of the Polish Society of Pharmacy Students and the Polish Pharmaceutical Society. In its strategy, the MUG emphasises sustainable development and social responsibility, which is reflected in the study programme in the field of pharmacy. The university involves students in projects aimed at improving public health and promoting pro-environmental activities, such as responsible management of pharmaceutical waste. Students can conduct health campaigns and workshops on the rational use of medicines in schools, pharmacies and health centres, which develops their social, communication and educational skills.

In line with the University's strategic direction regarding internationalisation, pharmacy students can participate in academic exchanges and international projects (e.g. under the Erasmus+ programme), as well as classes taught by foreign experts, such as visiting professors. This allows them to develop an attitude of openness and understanding towards cultural differences.

Graduate profile description

The title of Master of Pharmacy is awarded to graduates of a 5.5-year higher education studies in the field of pharmacy, which includes: completing the curriculum, passing exams, including the diploma exam, submitting a master's thesis and completing a six-month professional internship in a pharmacy. Graduates of the Faculty of Pharmacy at the MUG have the knowledge, skills and social competences included in the education standard preparing them for the profession of pharmacist and in line with the current requirements of the labour market. The master's degree in pharmacy, obtained after completing the studies, is recognised in all European Union member states.

Graduates have a thorough knowledge of how medicines work, including those of natural origin – they understand the mechanisms of their effects on the human body, know the chemical structure of medicinal substances and how they affect physiological and pathological processes. They have knowledge of drug testing, mastering the analytical methods used in the quality control of medicinal products. They know the principles of manufacturing various forms of drugs and are able to apply this knowledge in pharmacy and industrial practice. Graduates understand the functioning of the human body at the molecular and systemic level – they are familiar with physiological and biochemical processes and the mechanisms of disease development. They also have knowledge of pharmaceutical law, which allows them to comply with the rules for dispensing medicines, running a pharmacy and operating within the healthcare system in accordance with applicable regulations. The studies also prepare students for research and organisational work in the clinical trial sector.

The study programme is designed to combine the latest scientific achievements with practical skills, which makes graduates well prepared to solve professional problems in everyday practice.

In terms of practical skills, graduates are able to independently prepare medicines according to recipes, selecting the appropriate ingredients and manufacturing technologies. Graduates are able to provide professional advice to patients, informing them about the effects of medicines, how to use them, possible interactions and side effects. They provide patient care, monitoring the course of pharmacotherapy, detecting potential interactions between medicines and optimising treatment regimens in consultation with other healthcare professionals. Graduates are prepared to work in the pharmaceutical industry and research laboratories, where they can be involved in the production of medicines, conducting quality analyses and supervision of medicines, as well as research on the safety of pharmaceutical products. They are able to effectively use scientific sources of information – they search for, analyse and critically evaluate data from scientific publications and databases, which allows them to continuously update their knowledge and make decisions based on the latest scientific evidence, as well as to undertake further scientific work, choose a professional specialisation and undertake postgraduate studies. The MUG graduates are well prepared to work in the fields of scientific research, innovation and the implementation of new technologies. The study programme includes participation in research and development projects, which allows students to gain practical skills in working with data, analysing results and introducing innovative solutions in the field of pharmaceutical sciences into clinical practice.

Graduates stand out in terms of their responsibility for patients – they are ready to make decisions concerning health and take responsibility for their professional actions. They have excellent communication skills with patients, are able to explain medical issues in an empathetic and understandable way, listen to patients' needs and effectively explain difficult issues in simple language adapted to the recipient. They adhere to professional ethics – they maintain professional confidentiality and act in accordance with the Pharmacist's Code of Ethics. They are prepared to work in a medical team, where they cooperate effectively with doctors, nurses and other healthcare professionals for the benefit of the patient. They also demonstrate a willingness to continue learning, an awareness of the need to improve their qualifications and update their knowledge throughout their professional life, which is essential in the dynamically developing pharmaceutical sciences sector. As a university with an international profile, the MUG prepares its graduates to work in various international environments.

Graduates of pharmacy are prepared to take up professional employment in:

- public and hospital pharmacies,

- the pharmaceutical industry, including R&D and quality control and assurance departments,
- wholesalers and pharmaceutical companies,
- analytical laboratories and research and development centres,
- universities and scientific institutions,
- clinical trials, hospital wards and pharmaceutical care clinics.

Number of ECTS credits

1.	as part of classes conducted with the direct participation of academic teachers or other persons conducting classes	226
2.	as part of classes in humanities or social sciences	6
3.	as part of foreign language classes	12
4.	as part of optional classes	18
5.	as part of professional internships	72
6.	percentage share of ECTS credits for each discipline in the total number of points – in the case of studies assigned to more than one discipline	100
7.	the practical profile includes classes developing practical skills in excess of 50% of the number of ECTS credits	Y yes x not applicable
8.	the general academic profile includes classes related to the university's scientific activity in the discipline or disciplines to which the field of study is assigned, in excess of 50% of the number of ECTS credits	x yes Y not applicable

Number of hours

1.	physical education classes	60
2.	professional internships	1280

Methods of verifying and assessing the learning outcomes achieved by students throughout the entire education cycle

The general rules for verifying and assessing the degree of achievement of learning outcomes are set out in the Study Rules. The Rules define the organisation of studies and the related rights and obligations of students, including in particular those relating to: passing courses, taking examinations, passing the academic year, completing studies and obtaining a diploma of completion. They also define the grading scale used in the process of verifying student achievement. Obtaining a positive grade:

- very good (5.0) - corresponds to $\geq 90\%$ correct answers
- above good (4.5) - corresponds to $\geq 85\%$ and $< 90\%$ correct answers
- good (4.0) - corresponds to ≥ 80 and $< 85\%$ correct answers
- fairly good (3.5) - corresponds to ≥ 70 and $< 80\%$ correct answers
- sufficient (3.0) - corresponds to ≥ 60 and $< 70\%$ correct answers

means achieving the intended learning outcomes and passing the course, as well as obtaining the ECTS credits assigned to the course.

Failing grade (2.0) - corresponds to $< 60\%$ correct answers, means that the student has not achieved the intended learning outcomes, which is equivalent to failing the course and the necessity to repeat it.

The assessment of the degree of achievement of learning outcomes in terms of knowledge, skills and social competences is carried out during classes, professional internships, the completion of a master's thesis and a diploma examination. The learning outcomes specified in the syllabuses are measurable and subject to verification using the methods described in the syllabuses of individual subjects.

The student's progress in achieving the intended learning outcomes is verified using formative and summative methods. Formative methods of verifying learning outcomes are used during classes and concern the assessment of students' statements, various forms of their activity (e.g. determining physicochemical parameters, analysing medicinal substances, designing and conducting experiments, interpreting results) and their ability to work in small groups or teams. Summative methods, used during course assessment, are semester-based, e.g. in the case of courses lasting four semesters – Drug Formulation Technology I-III (verification after each of the three semesters of education and final verification after the fourth semester of education), or final, and include: pass without grade, pass with grade, and written/oral/practical exam.

The fact that a student has achieved the intended learning outcomes in terms of knowledge is assessed by means of, among other things: written or oral tests, revision sessions, multiple-choice tests, tests with closed or open questions, descriptive tests, discussions with students, observation of activities performed by the student, assessment of prepared homework (presentations/written/other), assessment of prepared reports. With regard to skills, this is done, among other things, through: assessment of tasks prepared by students, presentations, observation of the correctness of experiments performed, discussions with students and assessment of their participation in the discussion, practical tests/tests, written and oral tests, revision. The assessment of social competences uses observational methods (observation of the student while performing

activities during classes and summer internships, the degree of the student's involvement in the discussion) and descriptive tools (self-assessment questionnaires, surveys, internship journals).

Thesis works in the field of pharmacy, understood as master's theses, are carried out in the fifth year of study, in the summer semester. Students prepare their thesis works during classes in the subject Specialised Exercises and Research Methodology (377 hours). During these classes, students learn about research methods and techniques used in scientific research and acquire the skills to plan, conduct, document, interpret and present the results of scientific research. Students analyse scientific literature, conduct experiments and data analyses, compile and interpret the results obtained, and formulate conclusions from the research conducted. The thesis may take the form of a review paper, but the majority of theses are experimental in nature.

The topics of diploma theses cover issues related to the discipline of pharmaceutical sciences in the areas of scientific interest of the thesis supervisor. Students also have the opportunity to undertake diploma thesis topics in the pharmaceutical industry and in the hospital pharmacy of the University Clinical Centre in Gdańsk. The topics of the theses are subject to verification by the Faculty Committee for the Approval of Master's Thesis Topics in Pharmacy, which consists of the Dean of the Faculty, the Vice-Deans of the Faculty and the Head of the field of pharmacy. These are assessed by both the thesis supervisor and the thesis reviewer.

The rules for obtaining a degree in pharmacy are described in the Rules for Obtaining a Degree at the Faculty of Pharmacy, which were created on the basis of the MUG Rules of Study. The conditions for admission to the degree examination are:

- completion of the academic year: completion of all classes and practical training included in the study programme, passing all credit tests and exams required by the study plan;
- obtaining positive final opinions on the diploma thesis submitted by the supervisor and reviewer;
- submitting the diploma thesis to the Dean's Office – after completing and passing a six-month professional internship in a pharmacy.

The diploma examination consists of a presentation prepared by the author of the thesis and the graduate's answers to questions from the Examination Committee regarding the presented content. The second part of the examination consists of the graduate's answers to two questions selected at random from a pool of topics representing the learning outcomes of the pharmacy programme. For students of pharmacy, the pool of topics includes questions from the following areas: biomedical and biophysical foundations of pharmacy; analysis, synthesis and technology of medicines; biopharmacy and effects of medicines, pharmaceutical practice and professional practice, which verifies the learning outcomes assigned to the internships. A report of the master's

degree examination committee is drawn up on the course of the diploma examination, including the content of the examination questions.

The final result of studies ending with the preparation of a thesis and the passing of a final examination is calculated on the basis of the results obtained in the completed years of study.

This result is calculated according to a formula in accordance with the MUG Rules of Study:

$$2/3 * A + 1/3 * B \text{ where:}$$

A. = the arithmetic average of all exam grades obtained throughout the entire course of study, calculated in accordance with the MUG Rules of Study;

B. = the arithmetic average of the grades for the thesis and the diploma examination.

Students complete their studies and obtain a professional master's degree in pharmacy.

The learning outcomes of professional internships in the field of pharmacy include:

- deepening specialist pharmaceutical knowledge, including in the area of pharmaceutical law and the rules governing the sale of medicines, the storage of medicinal products and the safety of pharmacotherapy;
- improving practical skills, including the preparation of prescription medicines, the analysis of prescriptions and their correct implementation, conducting interviews and pharmaceutical consultations, keeping pharmacy records, and working with pharmacy IT systems;
- developing social competences related to the practice of the profession of pharmacist, including professional responsibility, ethics and confidentiality, communication with patients and the therapeutic team, independence in decision-making and problem-solving.

The verification of learning outcomes is carried out through interviews with students and constant observation of their activities by a designated supervisor, who at the end of the internship provides a descriptive assessment of the student in the form of an entry in the Internship Journal. The verification of learning outcomes also takes place during the assessment carried out at the Faculty after the end of the internship, which includes an interview with the intern, checking the internship journal and the protocols of the prescription medicines prepared. There is also the possibility of a visit to the pharmacy by a supervisor from the University, which allows for direct observation of the intern at the place of internship. During the diploma examination, the student may also draw a question from the area of professional practice, which is an additional form of verification of the learning outcomes assigned to the internship.

Duration, rules and form of professional internships

The study programme includes:

- a one-month internship at a public pharmacy in the third year of study,

- a one-month internship at a hospital pharmacy in the fourth year of study,
- a six-month professional internship at a pharmacy in the sixth year of study (11th semester).

The monthly internships take place between July and September and comprise 160 teaching hours, each worth 6 ECTS credits. The six-month internship consists of 960 teaching hours, which are assigned 60 ECTS credits. Registration for the internship takes place via an electronic system – the student selects a specific unit from the list available in the system or indicates a proposal for another place to carry out the internship. Detailed requirements for the internship are available in the internship framework programmes published in the online system and on the Extranet system websites. The internship supervisors from the Faculty are academic teachers who ensure the quality of education during the internship. Supervisors collect feedback from students and supervisors appointed at the internship location and fill out a form to evaluate the training institution.

Professional internships in public and hospital pharmacies are carried out in facilities that have a positive opinion from the Regional Chamber of Pharmacists and the Provincial Pharmaceutical Inspector. The pharmacy must continuously prepare prescription medicines. In the case of a six-month internship, it is also necessary to submit a Declaration and information card completed by the pharmacy to the Dean's Office. Most students complete their internships in the Tri-City, but it is also possible to complete them in a pharmacy located, for example, in the student's place of residence, after prior verification of the possibility of performing the tasks specified in the internship framework programme at the selected location. Thanks to cooperation with other Pharmaceutical Faculties, it is possible to visit pharmacies located outside the Tri-City. Supervision of the student at the place of internship may be carried out by a pharmacist with a licence to practise and a minimum of 5 years' experience, or a pharmacist with a specialisation and 2 years' work experience.

The monthly internship in the fourth year of study takes place in one of two modes: four weeks of internship are carried out in a hospital pharmacy or two weeks in a hospital pharmacy and two weeks in another training unit, which may be a research and development laboratory, an analytical laboratory, a pharmaceutical wholesaler, an authority supervising the manufacture of medicines, or the pharmaceutical sector.

During the monthly internship, students are required to keep an 'Internship Journal' and document their activities. It is mandatory to prepare prescription medicines and protocols describing the preparation of prescription medicines. The verification of learning outcomes takes place during visits to students at their place of internship and during the final assessment after the internship. The internship supervisor (pharmacist at the training facility) is responsible for implementing the internship programme and certifies this by signing the internship journal and issuing a final assessment and opinion. The internship is completed on the basis of checking the

'Internship Journal' and assessing the correctness of the activities performed – in particular, descriptions of the medicines prepared and descriptions of prescription medicines in multi-drug therapy. In addition, the teacher conducts an interview with the student and verifies the learning outcomes. In the event of any irregularities, the student is required to resolve them and retake the assessment. After completing the professional internship, students fill out a questionnaire, which is then compiled by a designated internship supervisor from the University and attached to the final report on the course of the internship in a given academic year. The professional internship journal is attached to the documentation of each student's course of study.

Attachments:

1. *Classes or groups of classes, regardless of their form, together with the learning outcomes assigned to them and the programme content ensuring that these outcomes are achieved.*
2. *Study plan – semester format (PL).*
3. *Learning outcomes.*