INFORMATION ON GRAPHIC AND INTERACTIVE COMMUNICATIONS STUDY PROGRAMME

Version (effective from): 2023-2/2 (no effective date)

Basic information

Name of programme	**GRAPHIC AND INTERACTIVE COMMUNICATIONS**
Programme properties	
Type of study	Master's degree study programme
Level	Postgraduate study programme
Title:	Master of Science (M.Sc.)
KLASIUS-SRV	(17003) Master's education (second Bologna cycle)
ISCED	(21) Arts
KLASIUS-P	(2130) Audio-visual techniques and (multi)media production (broad programmes)
KLASIUS-P-16	(0211) Audio-visual techniques and media production
Frascati	Engineering and technology
Level SOK	Level SOK 8
Level EOK	Level EOK 7
Level EOVK	Second degree postgraduate study programme
Areas/modules/field of study	No subdivision (study programme)
Member of the University of Ljubljana	Faculty of Natural Sciences and Engineering, Aškerčeva cesta 12, 1000 Ljubljana, Slovenia
Duration (years)	2
ECTS points per year	60
Mode of study	Full-time and part-time

Basic goals of the programme

The graphic arts industry is a typical service industry in that it markets services rather than its own products. Through the use of graphic technology, it enables the dissemination, exchange and storage of information in the form of graphic products. Almost all of its production is destined for a prestigious client, which may be a publishing house, a company, an organisation or an individual.

The characteristics of industrial production and organisation can be seen in the division of labour that has existed in this activity since Gutenberg. Today, there are numerous publishing houses, graphic and other companies operating in the market that are involved in the production of graphic products in whole or in part. The division of labour is therefore not only to be found in print shops, but also in other areas.

The use of computer technology has led to intensive integration with other media, to the distribution of the production of graphic products, to changes in organisational structures, to the need for new qualifications and to major changes in the existing qualifications, as well as to the emergence of new graphic professions.

The prospects for the graphic arts profession are assessed very differently. The fact is that in the past, the new media were generally not a substitute for the old media, but primarily a supplement and occupation of new market niches. The same is true of the Internet, which many predict will take over the role of all existing media and, of course, the print media. Print media can be expected to continue to adopt and successfully use new technologies. These trends are already visible and are also confirmed by the data on the growth of paper production and the good business of suppliers of equipment for the graphic arts industry. The graphic arts industry has reached a level of maturity that will give it a growth rate comparable to other "mature" industries for the next few decades. The turning point will come with the introduction of completely new communication technologies based, for example, on natural language recognition, artificial intelligence and natural human-machine interactivity.

A characteristic of the graphic activity is also the connection with a certain language area, since a text in native

language is also an integral part of the information carried by the graphic product. This provides a perspective for the graphic activity within national frameworks, but at the same time represents an obstacle for the expansion of activities outside the native language area.

The main goal of the master's degree in Graphic and Interactive Communications is to deepen the knowledge of the graduates of the programme in the field of graphic and interactive communications, to train them to develop new sources of knowledge using scientific research methods in the aforementioned field, thus enabling them to manage the most demanding work systems with developed critical reflection, social and communication skills to manage group work. A characteristic of the programme is the involvement of students in project work and participation in applied and basic research tasks to prepare them to continue their education at the third, doctoral level.

In accordance with the principles of the Bologna process, the programme represents a departure from the previous teaching philosophy with an otherwise correct arrangement of various technologies applied to selected science content. The default is a learning philosophy in which, in addition to the acquired knowledge, other competences of the master's students, their skills and abilities are important, in this case with an emphasis on deepening the theoretical foundations of rapidly developing technologies in the field of graphic activity and interactive communications.

General competences (learning outcomes)

– in-depth professional knowledge acquired through the study of theoretical and methodological concepts related to the training to develop new sources of knowledge with scientific research methods;
– developed critical reflection;
– ability to experiment and visually communicate different intellectual concepts;
– developed ability to learn independently in professional and scientific environment;
– ability to understand the interdependence between technology and design;
– ability to understand artistic notations and their technical translation into graphic products;
– initiative and independence in making decisions and managing sophisticated work systems;
– social and communication skills to manage group work, including projects based on the integration of scientific laws from different fields;
– developed sense of professional, ethical and environmental responsibility;
– ability to use modern tools, skills and abilities, especially in the field of ICT, in everyday professional life and in scientific research.

Subject-specific competences

– in-depth knowledge of mathematics and chemistry with developed capacity for thinking in terms of natural sciences;
– ability to evaluate technological characteristics, advantages and shortcomings of progressive network technologies and new media;
– understanding of interaction between the surface of printed materials, coatings, printing inks, adhesives and varnishes;
– developed autonomy, research skills and critical and self-critical evaluation of the use of typography for various products and content as well as various methods for conveying information;
– knowledge about photography as a useful and modern visual, informative and communicative tool for designing graphic products, with an emphasis on flawless technical, aesthetic, expressional and compositional arrangement of the achieved results;
– knowledge about the theory of mixing and reproduction of colours in graphic reproduction processes acquired through studies of various mathematical models that describe how the system works;

- knowledge and understanding of the basis and development of halftoning theory in printed media;
- knowledge about the capacity of creative integration of linguistic technologies in modern products and services, including mobile applications;
- ability to use natural interactivity in designing modern user interfaces.

Enrolment requirements and criteria in case of limited enrolment

Candidates can enrol in the master's degree study programme Graphic and Interactive Communications if they have finished:

a) at least first-level study programme evaluated with minimum 180 ECTS credit points from the professional fields of natural sciences, engineering, technology, computer and information science, media, economics, design, audio-visual technology and multimedia production, or an equivalent study programme completed under current regulations in the Republic of Slovenia or abroad;

b) at least first-level study programme evaluated with minimum 180 ECTS credit points from other professional fields, or an equivalent study programme completed under current regulations in the Republic of Slovenia or abroad if the candidates have completed prior to the enrolment all study obligations essential for continuing their studies. These obligations are determined by the department Study Committee and comprise from 10 to up to 60 ECTS credit points.

In case of limited enrolment, the candidates referred to in point (a) shall be short-listed on the basis of the number of points obtained in the first-level study programme or in a higher education or university study programme prior to the introduction of the Bologna declaration.

The candidates referred to in point (b) shall be short-listed according to:

- the number of points achieved in the first-level study programme (75% of points), and
- the number of points achieved in performing additional study obligations (25% of points).

Points are calculated by multiplying the average grade of studies or additional study obligations from point (b) rounded to one decimal place by 10 (maximum 100 points).

Criteria for crediting knowledge and skills obtained before enrolment

A student may receive credit for knowledge that corresponds to the course content of the Graphic and Interactive Communications programme and was acquired in various forms of education. The recognition of knowledge and skills acquired prior to enrolment is decided by the department Study Committee on the basis of the student's written application, attached certificates and other documents proving the successfully acquired knowledge and the content of these skills.

When recognising knowledge acquired prior to enrolment, the Study Committee considers the following criteria:

– whether conditions for enrolling into a specific educational course are adequate (required prior education for starting the study programme);

– whether the scope of the completed educational course (number of hours of prior education as compared to the scope of the course in question) adequately compares with the credited requirements;

– whether the areas covered by the prior education programme, which the applicant would like to have credited, adequately compare with the courses dealt with in the faculty study programme.

Acquired knowledge may be recognised as a completed obligation if the prerequisite for enrolment in the course was the same as the prerequisite for enrolment in the Graphic and Interactive Communications programme, if the prior education was at least 75% of the scope of the programme, and if at least 75% of the content was appropriate to the content of the course in which the obligation is recognised. If the Committee decides that the acquired knowledge can be recognised, it will be evaluated with the same number of ECTS credit points as the number of credits for the course.

Requirements for progression through the programme

To enrol in the 2nd study year, students must have collected at least 54 ECTS credit points.

Exceptionally, the department Study Committee may approve progress to the 2nd year for a student who has achieved at least 42 ECTS credits in the 1st year if they have a justified reason. Justified reasons are stated in the Statute of the University of Ljubljana.

To repeat the 1st study year, students must have achieved at least 30 ECTS credit points.

A student may repeat the year once or change the study programme once during the course of their studies due to non-fulfilment of obligations in the previous study programme.

In case of limited enrolment, the candidates will be short-listed based on the average grade of their studies up to that point.

The department Study Committee decides on the basis of an individual application of the student and proof of performed obligations whether the student meets the requirements for the transfer and recognition of obligations.

Assessment methods

Assessment methods are in accordance with the Statute of the University of Ljubljana and are specified in the curricula.

Transfer between programmes

Transfers between two study programmes are possible within the programmes of the Faculty of Natural Sciences and Engineering, Department of Textiles, Graphic Arts and Design, and other faculties in accordance with the Higher Education Act and the criteria for transfer between study programmes and other regulations.

Transfers are possible between programmes:

1. which ensure the acquisition of comparable competences or learning outcomes at the end of the study programme;
2. in which, according to the criteria for recognition of knowledge and skills acquired prior to enrolment in the study programme, at least half of the obligations under the European Credit Transfer and Accumulation System (ECTS) from the first study programme can be recognised, referring to compulsory courses of the second study programme.

It is possible to transfer:

1. from the 2nd degree programme in audiovisual technology and multimedia production or related fields of study;
2. from faculty programmes before the introduction of the Bologna declaration in the field of audiovisual technology and multimedia production or related fields of study.

A candidate may enrol by transfer in the final year of study if:

– the requirements for enrolment in the degree programme are met,
– there are vacant places,
– enough ECTS credits are recognised in the recognition procedure at the time of transfer to meet the requirements for enrolment in the higher study year.

In the case of limited enrolment, the applicants will be short-listed based on the average grade of their previous studies.

The department Study Committee decides on the fulfilment of transfer requirements and recognition of obligations on the basis of the applicant's individual application and proof of fulfilled obligations.

Requirements for completing studies

In order to graduate, students must meet all obligations in all courses they have enrolled in, and must prepare and defend their master's thesis.

Conditions for completion of individual parts of the study programme, if included in the programme

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Professional or scientific or artistic title (abbreviation)

Master of Science (M.Sc.)

STUDY PROGRAMME CURRICULUM
GRAPHIC AND INTERACTIVE COMMUNICATION

2025/2026

Name of study programme	**Graphic and interactive communication**
Programme characteristics	
Type	master's
Cycle	master
University of Ljubljana members	• Faculty of Natural Sciences and Engineering, Aškerčeva cesta 12, 1000 Ljubljana, Slovenija

Year 1

	University Course Code	Course title	Lecturers	Contact hours					Individual student work	Total hours	ECTS	Semesters	Elective
				Lectures	Seminar	Tutorials	Clinical tutorials	Other forms of study					
1.	0560900	Basic optional course 1		45	0	45	0	0	90	180	6	1st semester	yes
2.	0560901	Basic optional course 2		45	0	45	0	0	90	180	6	1st semester	yes
3.	0111944	Optional course 1		30	30	30	0	0	90	180	6	1st semester	yes
4.	0111945	Optional course 2		30	15	30	0	15	90	180	6	1st semester	yes
5.	0560957	Izbirni predmet 3		30	15	30	0	15	90	180	6	1st semester	yes
6.	0068287	Environmental management	Maja Klančnik	60	30	0	0	0	90	180	6	2nd semester	no
7.	0068288	Innovation management	Urška Stanković Elesini	45	30	0	0	15	90	180	6	2nd semester	no
8.	0068290	Quality management processes	Andrej Demšar, Marica Starešinič	30	60	0	0	0	90	180	6	2nd semester	no
9.	0068291	Marketing management of companies	Jani Toroš, Mateja Kos Koklič	45	45	0	0	0	90	180	6	2nd semester	no

				Contact hours									
10.	0068293	Research seminar	Barbara Luštek Preskar, prof. angl. in nem. , Barbara Simončič	30	60	0	0	0	90	180	6	2nd semester	no
		Total		390	285	180	0	45	900	1800	60		

Year 1, Temeljni izbirni predmeti

	University Course Code	Course title	Lecturers	Contact hours					Individual student work	Total hours	ECTS	Semesters	Elective
				Lectures	Seminar	Tutorials	Clinical tutorials	Other forms of study					
1.	0561970	Numerical methods	Emil Žagar, Jan Grošelj, Marjetka Krajnc	45	0	45	0	0	90	180	6	1st semester	yes
2.	0561971	Mathematics	Janko Bračič	45	0	45	0	0	90	180	6	1st semester	yes
3.	0561972	Organic chemistry	Janez Cerkovnik	45	15	30	0	0	90	180	6	1st semester	yes
4.	0068289	Artistic analysis of graphic products 2	Jure Ahtik	30	30	30	0	0	90	180	6	1st semester	yes
		Total		165	45	150	0	0	360	720	24		

Year 1, izbirni predmeti

	University Course Code	Course title	Lecturers	Contact hours					Individual student work	Total hours	ECTS	Semesters	Elective
				Lectures	Seminar	Tutorials	Clinical tutorials	Other forms of study					
1.	0068259	Quality factors in printing	Deja Muck	30	15	30	0	15	90	180	6	1st semester	yes
2.	0068260	Integration of design and technology	Primož Fijavž	15	30	30	0	15	90	180	6	1st semester	yes
3.	0068265	Basics of photography	Jure Ahtik	30	15	45	0	0	90	180	6	1st semester	yes
4.	0068266	Colour reproduction theory	Jože Guna	30	30	30	0	0	90	180	6	1st semester	yes

	University Course Code	Course title	Lecturers	Lectures	Seminar	Tutorials	Clinical tutorials	Other forms of study	Individual student work	Total hours	ECTS	Semesters	Elective
5.	0068267	Theory of typography	Klementina Možina	45	45	0	0	0	90	180	6	1st semester	yes
6.	0068269	User interfaces	Jože Guna	45	30	0	0	15	90	180	6	1st semester	yes
7.	0107006	Theory of halftonong	Deja Muck	30	15	30		15	90	180	6	1st semester	yes
		Total		225	180	165	0	60	630	1260	42		

Year 2

	University Course Code	Course title	Lecturers	Contact hours					Individual student work	Total hours	ECTS	Semesters	Elective
				Lectures	Seminar	Tutorials	Clinical tutorials	Other forms of study					
1.	0111946	Optional course 4		30	30	30	0	0	90	180	6	1st semester	yes
2.	0111947	Optional course 5		30	30	30	0	0	90	180	6	1st semester	yes
3.	0111949	Optional course 6		30	30	30	0	0	90	180	6	1st semester	yes
4.	0111950	Optional course 7		30	30	30	0	0	90	180	6	1st semester	yes
5.	0643485	Optional course 8		30	30	30	0	0	90	180	6	1st semester	yes
6.	0111957	Preparing the masters thesis		0	0	0	0	450	450	900	30	2nd semester	no
		Total		150	150	150	0	450	900	1800	60		

Year 2, Izbirni predmeti

	University Course Code	Course title	Lecturers	Contact hours					Individual student work	Total hours	ECTS	Semesters	Elective
				Lectures	Seminar	Tutorials	Clinical tutorials	Other forms of study					
1.	0068261	Interactive media 2	Aleš Hladnik	30	30	0	0	30	90	180	6	1st semester	yes
2.	0078070	Interactive systems 2	Jože Guna	30	15	30	0	15	90	180	6	1st semester	yes
3.	0068263	Methods for characterising graphic products	Diana Gregor Svetec	30	30	30	0	0	90	180	6	1st semester	yes

4.	0078073	Modelling graphic process	Klemen Možina	45	30	0	0	15	90	180	6	1st semester	yes
5.	0068264	Advanced computer graphic and visualisations	Helena Gabrijelčič Tomc	30	30	30	0	0	90	180	6	1st semester	yes
6.	0068266	Colour reproduction theory	Jože Guna	30	30	30	0	0	90	180	6	1st semester	yes
7.	0068268	Artistic photography	Jure Ahtik	30	15	45	0	0	90	180	6	1st semester	yes
8.	0068270	Creative typography	Klementina Možina	0	60	0	0	30	90	180	6	1st semester	yes
9.	0068271	Visualisation of information	Jure Ahtik	15	30	30	0	15	90	180	6	1st semester	yes
10.	0107006	Theory of halftonong	Deja Muck	30	15	30		15	90	180	6	1st semester	yes
11.	0111987	Editing information	Barbara Luštek Preskar, prof. angl. in nem. , Klementina Možina	30	60				90	180	6	1st semester	yes
12.	0111990	Extended Reality Technologies and Applications	Jože Guna	30	15	30		15	90	180	6	1st semester	yes
13.	0642225	Barrier properties of packaging materials and systems	Urška Vrabič Brodnjak	45	30			15	90	180	6	1st semester	yes
		Total		375	390	255	0	150	1170	2340	78		