MD-2068, CHISINAU, 9/7 STUDENTILOR STR, PHONE: 022 50-99-63, www.utm.md

MASTER'S THESIS DEFENSE

1. Course unit information

Faculty	Computers, Informatics and Microelectronics				
Chair/Department	Informatics and Systems Engineering				
Cycle of studies	Master's degree, cycle II				
Study program	**Data Science**				
Year of study	**Semester**	**Type of evaluation**	**Formative Category**	**Optionality category**	**ECTS credits**
II (full-time education)	4	E-examination	S – Specialty course unit	O – Obligatory course unit	2

2. Total estimated time

Total hours in the curriculum plan	**Including**			
	Auditory hours		**Individual work**	
	Course	**Practice**	**Term paper**	**Presentation**
60	-	-	-	60

3. Preconditions for access to the course unit

According to the curriculum plan	The publication of the scientific article is a mandatory criterion for passing this course. Assessments must be completed within the established deadline, according to the academic calendar, with a minimum grade of "5". The similarity rate must not exceed 30% following the plagiarism check of the explanatory report.
According to competences	Researching a field of study, identifying problems and finding solutions, improving processes. Designing and developing applications.

4. Conditions for carrying out the educational process

4.1 Admission procedure for the defense of the master's thesis

The admission procedure for the defense of the master's thesis is carried out on two distinct aspects:

1. Based on the results of the ongoing assessments conducted throughout the development of the bachelor's thesis, after each stage of its elaboration (point 4.1 of this guide). The student's work is periodically evaluated according to the academic calendar approved for the current academic year, with distinct grades based on a grading scale from 10 to 1. The grade for the development of the master's thesis is calculated as the arithmetic mean of the grades obtained in the ongoing assessments and is expressed as a number with two decimal places.
2. Based on the results of the plagiarism check of the master's theses in accordance with the provisions of the UTM Anti-Plagiarism Regulations.

For this purpose, the final version of the thesis and the candidate's handwritten declaration must be submitted to the supervisor in both paper format and electronic format (DOC or DOCX) at least 15 days before the scheduled defense date. The responsibility for the technical quality and originality of the work lies with the author of the thesis and the master's thesis supervisor. The Information and Communication Technology Department will initiate the verification process after the submission deadline has passed and will provide access to the department head for the evaluation results regarding the similarity rate. Master's theses with a total similarity rate exceeding 30% with other sources will be analyzed by the Anti-Plagiarism Committees to determine whether the identified similarities fall within the criteria stipulated by the UTM Anti-Plagiarism Regulations. Based on the decision of the Anti-Plagiarism Committee, theses with a similarity rate that exceeds the allowed limit but does not surpass 40% will be returned to students for plagiarism removal through correction within a maximum of 5 days. Master's theses that have successfully passed the plagiarism check upon resubmission and have a similarity rate not exceeding 30% will be accepted for defense in the current academic year, within the deadlines set by the academic calendar. Students

found guilty of plagiarism, including repeated offenses or failure to meet deadlines after correction, will not be allowed to defend their master's thesis in the current academic year and will be expelled for academic failure. Master's theses excluded due to plagiarism will be annulled and cannot be defended at UTM. Students who are not admitted to the defense due to plagiarism will be re-enrolled, provided they repeat all activities related to the development of the master's thesis, for which a new topic will be assigned.

The student is admitted to the master's thesis defense if they have obtained a minimum grade of "5" for each stage of the thesis development and have successfully passed the Anti-Plagiarism procedure.

The following materials must be submitted to the Master's Examination Committee one day before the thesis defense:

- the bound thesis, the thesis defense report in electronic format (PowerPoint presentation);
- additional work, if required by the thesis structure;
- the supervisor's approval;
- the master's thesis review.

Materials that highlight the practical and scientific significance of the master's thesis may also be presented (implementation documents, patents, certificates) along with copies of articles published on the thesis topic.

4.2 Recommendations regarding the defense of the master's thesis

For the presentation of the master's thesis during the Master's Examination Committee session, each candidate is allotted 10-15 minutes. It is recommended that the student prepare a structured outline for the report. The report should clearly highlight:

- the master's thesis topic;
- the objective of the master’s thesis;
- presentation of the current situation regarding the adressed issue;
- identification of the highlighted problems;
- presentation and justification of the adopted solutions;
- conclusion (final remarks).

The main provisions of the report must be supported by data, graphs, charts, tables, structural, conceptual, and functional diagrams, mathematical formulas, computer simulations of developed programs, etc.

The candidate must demonstrate solid general knowledge in their field, as well as thorough preparation on the thesis topic, and be able to answer questions posed by the members of the Master's Examination Committee.

Answers should be concise, clear, and to the point. In some cases, with the approval of the Chair of the Master's Examination Committee, the candidate may refer to their thesis when answering questions.

During the report presentation and while answering questions, the candidate must maintain direct contact with the committee members.

To develop the necessary skills for the presentation, a preliminary public defense of the master's theses will be organized under the supervision of the department head one week before the official defense date. For the proper organization of the defense, electronic presentations must be installed in the designated room one day before the defense. Presentations must comply with the UTM Visual Identity Guide, use the faculty-assigned color, and include both the UTM and faculty logos.

The presentations, organized in slides, will comply with the following requirements:

- the presentation will contain between 10 and 20 slides;
- the first slide will present the theme of the thesis, the name and surname of the graduate and the supervisor and, if applicable, the name of the institution at whose request the work was executed;
- the second slide will contain the statement of the problem, also mentioning the relevance and importance of the work for the field and for the Republic of Moldova, as well as the author's contribution to solving the problem;
- the next 2-4 slides (if possible) will reflect the analysis stage and will result in the specific orientations of the work;
- this will be followed by 2-5 slides dedicated to the implementation process, methodologies, and technologies used;
- if there are implementation documents (beneficiary's review or others), then 1-2 slides will be dedicated to this aspect;

– the last slide will be dedicated to conclusions, recommendations, and suggestions.

On the day of the master's thesis defense, the student is required to arrive at least 10 minutes before the announced start time. At the end of the defense, the student is invited to participate in opinion surveys.

After completing the defense within the study program, the student must report to the department with their identification card to sign the documents based on which the master's diplomas will be issued. These documents will be prepared by the secretary of the evaluation committee.

One week after signing the documents at the department, the student can collect the documents submitted at enrollment (office 1-102) by returning the student ID card. It should be noted that the academic documents submitted can be collected by students who have returned all borrowed materials to the UTM library, vacated their room in the UTM dormitories, and have no outstanding financial obligations to UTM.

When receiving the master's diploma, the student must present their bachelor's diploma (or the document submitted at enrollment) and their identification card. The master's diploma is issued to the holder or another person based on a notarized power of attorney.

5. Acquired specific competencies

Professional competencies	**CPM1.** System architecture design and development **CPM2.** Monitoring technological trends, innovation, and sustainable development **CPM3.** Application development, component integration, and systems engineering **CPM4.** Personnel development **CPM5.** Process improvement
Transversal competencies	**CTM1.** Autonomy and responsibility **CTM2.** Social interaction **CTM3.** Professional and personal development

6. Course unit objectives

General objective	**The master's thesis** represents an in-depth, interdisciplinary, or complementary scientific research or artistic creation in the field of theoretical and practical problem analysis. It must demonstrate professional and research competencies within the master's program, advanced scientific knowledge of the chosen topic, and include elements of novelty and originality in the development or solution of the research problem. **The master's thesis** is an original, scientifically grounded work that contains theoretical and/or experimental results in the relevant field of study and research. **The main objective** of the master's thesis is multidisciplinary research and analysis of a technical, organizational, economic, or mixed subject, with the goal of applying the results in the areas of activity specific to the specialization.
Specific objectives	• correct formulation and evaluation of the problem proposed for research in the thesis; • determining the position and level of the problem formulated in the master's thesis, considering the current state of development in the field of specialization; • selection and analysis of doctrinal, technical, economic information sources, as well as invention patents related to the problem or types of problems analyzed in the thesis; • justification of the research methods applied or developed to solve the formulated problem; • justification of the adopted solutions and decisions; • proper use of research tools—computing equipment, laboratory devices—as instruments for optimization, design, analysis, synthesis, and evaluation; • systematization, consolidation, and extension of practical and theoretical knowledge in the field of specialization and its application in solving scientific, technical, economic, and production-related tasks; • development of independent work skills and mastery of research and experimentation methods for solving the tasks addressed in the master's thesis; • convincing demonstration of the ability to publicly present the results and solutions obtained during the master's thesis defense.

7. Course unit content

Individual work topic	Number of hours
	Full-time education
Preparation to present the thesis for public defense	60
Total hours of individual work:	**60**

8. Using generative AI

Permission to use	The use of generative AI in assignments and projects is permitted, provided that students adhere to the following rules: • Generative AI may be used to generate ideas, text structures, or code, but all generated materials must be reviewed and adjusted by the student to ensure that they meet academic requirements. • Any use of generative AI must be declared in the appendix section of each paper, using the phrase: "During the preparation of this paper, the author used [NAME OF TOOL / SERVICE] for the purpose of [REASON]. After using this tool / service, the author reviewed and edited the content as necessary and assumes full responsibility for the content of the paper."
Restrictions to use	Students ***MUSTN'T consider generative AI as a reliable source of information***, as it does not provide clear references or documented sources. • ***Direct citation of AI-generated content*** in academic papers as if it were a primary source ***isn't permitted.*** • Activities in which the use of **generative AI is prohibited** are specified by the teacher and are usually ***intermediate and final assessments*** or that don't involve professional competence development activities.

9. Bibliographic references

Main	1. Guide: Elaboration and defense of Master's Theses, https://utm.md/wp-content/uploads/2020/05/Ghid- Elaborarea-si-sustinerea-tezelor-de-master-Master.pdf 2. Order on monitoring the development of Bachelor's and Master's Theses https://utm.md/acte_normative/interne/ordinMonitorizareaActivitatiiElaborareTezeLicenta.pdf
Additional	1. UTM anti-plagiarism regulation, https://utm.md/wp-content/uploads/2019/09/Regulament- antiplagiat_UTM-2019-_final.pdf

10. Evaluation

Documentation practice and thesis development	Thesis defense
25%	75%
Minimum performance standard. Defense of the thesis within the established deadline, according to the academic calendar, with a minimum grade of "5".	

The master's thesis is evaluated distinctly with grades based on a scale from 10 to 1, with a minimum passing grade of 5. The grade for the defense of the master's thesis will be calculated as the average of the grades awarded by the members of the Examination Committee.

The final grade for the development and defense of the master's thesis will be calculated using a weighted average: 75% for the thesis defense and 25% for the documentation practice and thesis development, expressed as a number with two decimal places.

It is recommended that the evaluation of the master's thesis be carried out based on the following criteria:

Evaluation criteria	Very well (10-9)	Well (8-7)	Satisfactorily (6-5)	Unsatisfactory (4-1)
The actuality of the research theme	The thesis topic fully aligns with the requirements and needs of the society.	The thesis topic primarily aligns with the requirements and needs of the society.	The thesis topic partially aligns with the requirements and needs of society.	The thesis topic does not align with the requirements and needs of society.
The quality of scientific foundation	The theoretical processing and analysis, as well as the critical and interpretative involvement of the author, are good.	The theoretical processing and analysis, as well as the critical and interpretative involvement of the author, are sufficiently good.	The theoretical processing and analysis, as well as the author's critical and interpretative involvement, are general, without concrete aspects.	The theoretical processing and analysis, as well as the critical and interpretative involvement of the author, are insufficiently good
Achievement of research objectives	The research objectives have been achieved.	The research objectives have been largely achieved.	The research objectives have been partially achieved.	The research objectives have not been achieved.
The quality and complexity of the research methodology	The applied methodology is relevant.	The applied methodology is suitable for the purpose.	The applied methodology is general, without concrete aspects.	The applied methodology is inadequate for the purpose.
The practical relevance of the conducted study	The conducted study is relevant to the field, offering useful and practical solutions.	The conducted study is relevant to the field, offering solutions that are less practical.	The conducted study is partially relevant to the field, offering practical solutions that are complicated to implement	The conducted study is not relevant to the field, offering useless solutions.
The quality of the presentation (readability, graphics, eloquence)	The work is presented in a clear, coherent manner, predominantly using charts and drawings	The work is presented in a clear, coherent manner, with partial use of charts and drawings.	The work is presented clearly, but lacks coherence in the exposition, with a predominant use of charts and drawings.	The work is presented without coherence in the exposition, with occasional use of charts and drawings.