

University of Medicine and Pharmacy "Iuliu Hatieganu"

Cluj-Napoca

Faculty of Dental Medicine



PRACTICAL GUIDE FOR STUDENTS

TO CONCEIVE, WRITE AND PRESENT THE

LICENSE THESIS

2020

*"More important than having information is knowing where to look
for it"*

Samuel Johnson

*"Better to know how to search for everything than to look for
everything"*

Patrick Mendelson

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Indication

This is a "guide" which has the purpose of helping students fulfill their license thesis study and design their thesis. The present document is not intend to be a complete, exhaustive guide on this topic and, as a result, it does not absolve the student or thesis coordinator of the moral and/or legal responsibility of the improper completion of the study. We recommend that the student works effectively with the thesis coordinator and get the full information from him/her. The student can also review scientific publications that explain extensively the way in which studies must be carried out and how results should be published.

Consultation of the guide does not replace the collaboration between the student and the thesis coordinator of the license thesis.

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Introduction

According to the Carta of the “Iuliu Hațieganu” University of Medicine and Pharmacy, Cluj-Napoca, the graduation exam of the Faculty of Dentistry consists in the evaluation of the fundamental and specialized knowledge, as well as in the presentation of the license thesis.

The fulfillment of the license thesis begins with choosing the topic and the thesis coordinator. This aspect falls within the student's obligations. Students are required to choose their research topic and the coordinator of the license thesis by the end of March of the year preceding graduation (Dental Medicine -Year V of Study, respectively Dental Technique -Year II of Study). The license thesis is an essential component in assessing the student's activity. It assesses the student's ability to design and carry out one of the following types of thesis: (i) scientific research; (ii) a literature review on a topic in the dental medicine field; (iii) clinical case presentation, consisting in at least 3 representative cases from the personal portfolio of the student or the thesis coordinator (the student has to actively participate in establishing the diagnosis and treatment of those patients) or (iv) socio-economic and legislative studies of medical services, in the dentistry field. The license thesis must reflect the student's work, the support provided by the collaborators who participated in the research should be explicitly mentioned in the thesis. In the "Introduction" part of the thesis, the student can express its gratitude for the support received in completing their thesis.

The license thesis will be submitted to the decanat of the Faculty of Dental Medicine and it will have attached a statement on the graduates' own responsibility, dated and signed in original. This statement must testify that the work belongs to him/her, it has never been presented as a license thesis before and is not plagiarized.

This guide is structured in four main chapters:

- I. General framework of the license thesis
- II. Rules for designing and writing the licence thesis
- III. Structure of the license thesis
- IV. Rules for presenting the license thesis.

I. GENERAL FRAMEWORK OF THE LICENSE THESIS

1.1. Stylistic recommendations and aesthetic requirements

It is recommended that the language used is specific for research/scientific papers. The language will be clear and concise, the information will be presented coherently, correctly, and in a logical order. Checking and removing grammatical errors using Word tools (in Word 2010-Review-Language-Language References - choose "English"- Review Spelling and Grammar) and the Explanatory Dictionary of English Language. Before punctuation marks free space will not be left, it will appear immediately after the related text. Also, no space will be left after openings and before closing parentheses.

The bibliographical sources, with their full form, will be mentioned in the list of references and will be entered in the text, in numerical form, in round parenthesis, before the end of the sentence/phrase marked by "point". For more details, please refer to the chapter "Citation rules".

Plagiarism, represents the use of another persons' ideas or words, the use of figures, tables or schematics, without mentioning the bibliographic source from which they were taken. Also, the use of more than 5 consecutive words copied from another source, regardless of whether that source is mentioned or not is considered plagiarism. Translating your own text into another language is not considered plagiarism. For any idea taken, the source must be mentioned, whether the idea is translated or not, or whether the text has been reformulated, the idea is belonging by law to another person.

The student or thesis coordinator may use "antiplagiarism" software to verify the text of the license paper.

1.2. Terms and phrases to avoid

The following phrases and words should be avoided:

- a) Adverbs: recommended to be used in a limited number: most of the time they are being used abusively;
- b) Jokes or puns: have no place in a scientific paper;

- c) Adjectives: "good", "bad", "beautiful", "stupid", "great", etc. for evaluating the quality of a method, precise expressions will be used (Example: "Method A requires less material compared to method B");
- d) "Perfect": nothing is perfect. If perfection existed, scientific research would have no basis;
- (e) "An ideal solution": is a judgment of relative value, in the license thesis, such oppinions are not acceptable;
- f) "Today": it cannot be used as a synonym for "in this age of scientific research". "today" is a relative term;
- g) "Soon": a relative term with no utility in scientific writing;
- h) "We were surprised to..." - personal opinion. It has no scientific value;
- i) "Seems": relative term. It doesn't matter if it seems, the important thing is whether or not it has been proven;
- j) "Seems to show": relative term, which has no place in scientific writing. One thing has been proven or not, through research;
- k) "In terms of ...", it is a vague expression;
- (l) "Different": shall be used in conjunction with a category analysed during the research. Different from what? How different (quantification)?
- m) "Many": is a vague term - how many? (results must be expressed exactly and specifically!);
- (n) "Probably": is used only as a statistical term (conditional probability and independent events);
- o) "Obviously": it's a relative term. What's obvious to some people is not obvious to others (obviously for whom?);
- p) "Together with": use only "with";
- q) "This", "That": reference may be made to the subject of the previous sentence, the entire previous sentence, the entire previous paragraph, etc.
- r) "Little", "Most", "All", "Anything", "Everyone": must be used carefully. A license thesis must provide accurate and quantified data;
- s) "Must", "Should": express a personal opinion of absolute value. These terms have no place in scientific writing. The use of expression is: "recommended";
- t) No sentences or phrases will start with percents ("92% of patients have been successfully treated by using the system of");

u) Exhaustive use of expressions such as 'in respect of...', 'in view of those exposed...', 'in addition', etc. are merely ballast, without bringing any clarification or value to the scientific text.

1.3. Types of license thesis

A license thesis can be designed and developed in one of the 4 following types:

1.3.1. Fundamental, experimental or clinical scientific research;

1.3.2. Thematic review of literature (synthesis of literature);

1.3.3. Clinical cases presentation;

1.3.4. Sociological, economic or legislative study on dental practice.

1.3.1. Fundamental, experimental or clinical scientific research

This form of the license thesis is based on an original scientific research, designed by the student or the thesis coordinator. In order to carry out such a study, it is necessary to be obtained the approval of the Ethics Commission of Scientific Research within the University of Medicine and Pharmacy "Iuliu Hațieganu" Cluj-Napoca.

The necessary documents for approval will be submitted to the Ethics Commission (at the email address - etica.cercetare@umfcluj.ro), before starting the scientific study.

These must include: application, research protocol, opinion form, personal data processing agreement, information form and informed consent for clinical studies in which the patients participate. The forms and how to complete them can be consulted at <http://www.umfcluj.ro/universitate-ro/prorectorate-ro/stiintific-ro>. For clinical studies, it is necessary to obtain the approval of the Ethics Commission of Emergency Clinical Hospital, Cluj-Napoca.

The research presented in the licence thesis may be part of a research carried out within the framework of a scientific project, in which case, the acceptance documents necessary to conduct the licence research must be drawn up, in the "Introduction" part, that specification must be made in the form "Support provided for the research" (Aknowlegment).

1.3.2. Thematic review of literature (synthesis of the literature)

The thematic review of the specialized literature (“synthesis of literature”) represents the synthesis of the data from the specialized literature, from the dentistry field, respectively from the dental technique. The rationale for such a study is to demonstrate the graduates' ability to make accurate, systematic, or non-systematic documentation of definite scientific value. This type of study reflects the level of documentation of the student in the field of the license thesis, the way in which he/she synthesizes the data, respectively the way in which he/she develops the discussions on the topic of controversies or conceptual similarities, from the specialized literature.

1.3.3. Clinical cases presentation

Through this form of thesis, the graduate can demonstrate his/her direct involvement in solving clinical cases of great complexity, as well as his/her ability to develop a scientific reasoning, in correlation with the specialized literature in the field.

1.3.4. Sociological, economic or legislative study on dental practice

The liberal character of the dentist profession attracts in the sphere of interest of the future doctor the following aspects: the social conditions specific to certain population groups, the economic conditions, the normative legislative framework for professional insertion and professional career development. The research can also refer to different geographical areas.

II. RULES FOR DESIGNING, WRITING AND PRINTING THE LICENSE THESIS

The license thesis (without references) will comprise a number of 40-60 pages in ISO B5 format (176x250 mm). The drafting will be done in Arial font size 11, and 1.5 spacing between rows. The text within the paragraphs will be aligned between the right and left edges (use the "justified" command). Each paragraph will start with a space entered with the "Tab" key. Remove spaces between paragraphs that appear by using the "enter" key (use the "Remove Space After/Before Paragraph" function in Word, View section).

Page numbering will start with the title page, continuing until the last page of the thesis, displaying the numbering on the page starting only from the "Contents" page. The page number will be inserted (through the Insert / Page Number function / Bottom of Page) in the center of the page. The main chapters of "General Part" and "Special Part" will always start on a new page. Chapter headings will be centered on the page (in the middle of the row, using the "Text Centers" command). The characters used to write the headings "General Part" and "Special Part" will be with Arial 26.

The size of the figures, drawings, schematics, graphs or tables inserted into the text must be as much as their readability requires, proportional to the text and page size. In the license thesis are not accepted pictures, drawings, exaggerated size graphs, which take up an entire page, in order to increase the number of pages.

Iconography must be indicated in the text, usually at the end of the phrase in support of which it was brought, before the "full stop". Pictures, drawings, diagrams, graphs are referred to as figures and are indicated with the abbreviation "fig.", followed by its number, in the order of appearance in the text, information contained in parentheses - e.g. (fig. 3).

Each iconography element must have its legend, positioned below. The legend of iconography (figures) is represented by a short, explanatory text with no exhaustive description. The details "in extenso" will be written in the text of the document.

Tables are indicated with the name "table" and numbered separately, in order of appearance in the text. The table names will be positioned above the tables. Their indication is preferably positioned at the end of the phrase. The insertion of the indication may be made in the form of:

- "..... (table 1).";
- "Results can be observed in Table1";

- "Table 1 describes...."

The printed copy of the license thesis, accompanied by the report of the thesis coordinator, will be submitted to the Dean's Office of the Faculty of Dentistry, prior to presenting the thesis. The submission deadline is announced by the Dean's Office of the Faculty of Dentistry.

The license thesis is printed only on one side of the sheet of paper (NO double-sided), bind and cover carded. The binding of license theses in spiral format is NOT accepted.

III. THE STRUCTURE OF THE LICENCE THESIS

3.1. Standardised items for a license thesis

The license thesis will be structured in chapters and will include the mandatory following elements:

Cover (see model at the end of the document – Annex 1)

Title page (see model at the end of the document – Annex 2)

Contents: Contains the titles of all chapters and subchapters, accompanied by the page number at which each chapter begins. The table of contents is automatically redacted with the "Table of Contents - Index and Tables" function on the "Insert -> Index and Tables -> Table of Contents" menu -> Contents (see the model at the end of the document – Annex 3).

Introduction: is a chapter of 2-3 pages, in which the hypothesis of the study underlying the license thesis will be exposed. Important data in the current literature of the addressed field, the relevance and motivation for choosing the topic, the value of the topic in the field of dental medicine/dental technique and the approach of the topic must be clear. Bibliographic references can also be inserted into this part of the thesis. This part will contain: the motivation of the research, the novelty of the addressed topic, the general purpose and objectives of the research.

Division of the various chapters/subchapters is as follows:

General part (Current state of knowledge) – 1/3

Special part (Personal research) – 2/3

- Purpose and objectives - 5%
- Material and methods - 25%
- Results - 40%
- Discussion - 25%
- Conclusion - 5%

References

Appendix (+/-)

3.2. General part (Current state of knowledge)

The general part presents the current level of knowledge in the field of the subject of the license thesis, related to dental medicine/dental technique. The purpose of writing this part is to demonstrate the graduate's ability to select and integrate existing information into the literature, on the subject of interest. The role of this part consists in introducing the reader into the thesis topic, by presenting the subject correctly, completely and synthetically, with reference to the latest research in the field. It also presents the elaboration of the hypotheses underlying its own research, by selecting and analyzing theoretical sources (what is currently known about the subject of interest and what has not been fully elucidated, aspects that will be the starting point of the research, presented in the special part of the license thesis).

The common mistakes that occur in this chapter consist in the summary and inconsistent data presentation, the chaotic, non-systematic presentation of information from the literature, without highlighting the aspects that support the formulation of the research hypotheses.

For the scientific **research paper**, this part presents analytically the scientific data existing in the literature, in connection with the topic of the carried out research.

For the **review type** of thesis, in this part is presented the wide domain from which the topic of the review was selected, arguments being the value of the chosen topic.

For the **case presentation** thesis, in this part is documented and describes the level of knowledge and the current approach, in the pathology of the presented cases.

For the **socio-economic study**, this part must contain an informative material, on the public and scientific interest in the topic addressed, and its implications in the practice of dental medicine/dental technique.

For each type of license thesis, consultation of the relevant bibliographic sources is mandatory and must be highlighted by correctly citing the sources of information.

3.3. The special part

The special part is the most important component of the license thesis. In this part, the personal contributions are presented and the scientific value of the licence thesis is demonstrated. This part must represent **two thirds** of the total number of pages of the thesis, but not less than **30 pages**.

3.3.1. ELABORATION OF THE SCIENTIFIC RESEARCH/SOCIO-ECONOMIC STUDY TYPE OF THESIS

The special part includes the chapter presenting the graduates' **personal contributions** to the research topic. The following can be considered chapters of this section: **Purpose and Objectives, Material and Method, Results, Discussions and Conclusions**.

3.3.1.1. Purpose and Objectives

It will describe the purpose of the research and what objectives have been set to be achieved in the thesis.

Common mistakes:

- the absence of clear objectives, explicit questions/hypotheses, which were the basis for the initiation of the research;
- improper research hypotheses, which are not related to the objectives of the research;
- research hypotheses developed without any scientific support.

3.3.1.2. Materials and Methods

This section contains the presentation of the material, apparatus and instruments used to carry out the research, as well as its methodology and its implementation. There has to be a clear presentation of what was done. It is a "recipe" of the research. The student must answer the questions: **Who?, What?, When?, Where?, How? and Why?**

The student must obtain the approval of the Ethics Committee for Scientific Research for Fundamental, Experimental and Clinical Research (see Chapter 1.3.1.).

Depending on the characteristics of the study, the **Materials section** may include:

- the targeted population, available population (if applicable);

- the characteristics of the questionnaires applied (if applicable);
- sample of materials used to analysis (with indication of the origin of the producers) (if applicable);
- the number of subjects (e.g. extracted teeth) in the study (if applicable);
- instruments and equipment used (with indication of manufacturers);
- the sampling method;
- the inclusion and exclusion criteria of the subjects in the study;
- the method for calculating the volume/waist of the sample;

Common mistakes:

- omitting the definition of the targeted, available population and sample;
- omitting the time and space framing of the study;
- omitting the presentation of the sampling method, the inclusion and exclusion criteria;
- omitting the presentation of the method for calculating the volume/waist of the sample;

Depending on the characteristics of the study, the **Method** will describe:

- the investigation methods, equipment/instruments used;
- methods of data collection;
- methods of summary and statistical processing of data;
- the tools used in data collection (name of equipment, year of production, etc.);
- the method of harvesting the biological products;
- the method of transport and preservation of the biological samples;
- how to prepare the samples/patients for measurements (if applicable).

Note! If the method of investigation is known, it shall be briefly described and referenced to the references supporting it from a theoretical and applicative point of view.

In this section it is recommended:

- the use of images during the different stages of work;
- presentation, as far as possible of a schematic rendering of the work stages ("workflow" of the study protocol).

Common mistakes:

- the use of investigation tools for which the scale of values has no units of measurement;
- the use of inadequate methods for data collection;
- the use of inadequate methods for summarising the data;
- the use of inadequate methods for statistical analysis of data.

Statistical analysis:

- indicates the statistical tests used (Student, ANOVA, etc.) and the reason for using each test (e.g. example depending on the distribution of data, etc.)
- if a computer program has been used for statistical analysis, the name and version of the programme and also the statistical test used should be mentioned as follows: "the results were analyzed using the Excel Data Analysis and Social program Science Statistics (socscistatistics.com)"
- specify the chosen statistical significance (e.g. "differences considered statistically significant if $p < 0.05$ ")

3.3.1.3. Results

This section will present all the results of the student's research, both the expected ones and the ones obtained by chance. No error (a "bias") will be introduced in the research performed by presenting only the favorable results. The results **will not be changed** so that they validate the hypothesis.

The presentation and analysis of the data can be done on two levels:

- descriptive level: adequate indicators of centrality and dispersion, for quantitative variables, and frequencies for qualitative variables;
- the level of advanced statistics (by the proper application of statistical tests in accordance with the research assumptions and the type of variables present).

Note: Each table and graph will be explained in the text. Figures and tables will be referred to the text!

The numbering of figures will be done in order of their appearance in the text, with Arabic numerals, following the numbering of figures in the General Part (if applicable). The number and title of the figure will be noted immediately below the image of the figure displayed. Each figure will have a legend, for example:

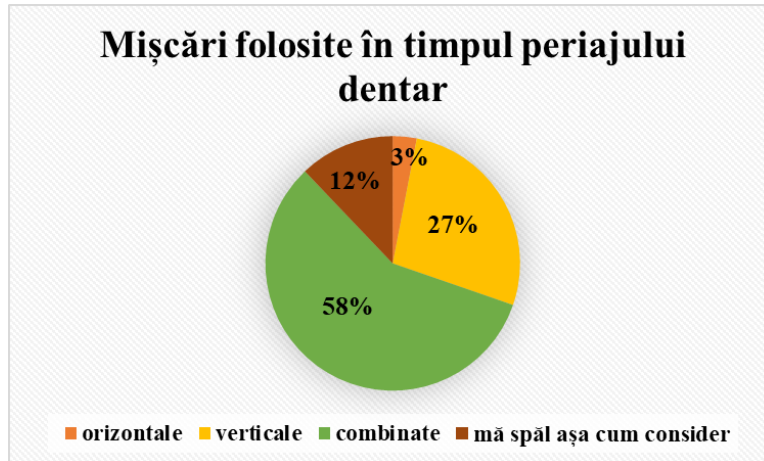


Fig. 1. Percentage distribution of subjects by movement during dental brushing

Figures must be clear and designed so that the reader understands their contents without having to read the related text. Graphs will have the units of measurement expressed on axes, and legends for the abbreviations used, for example:

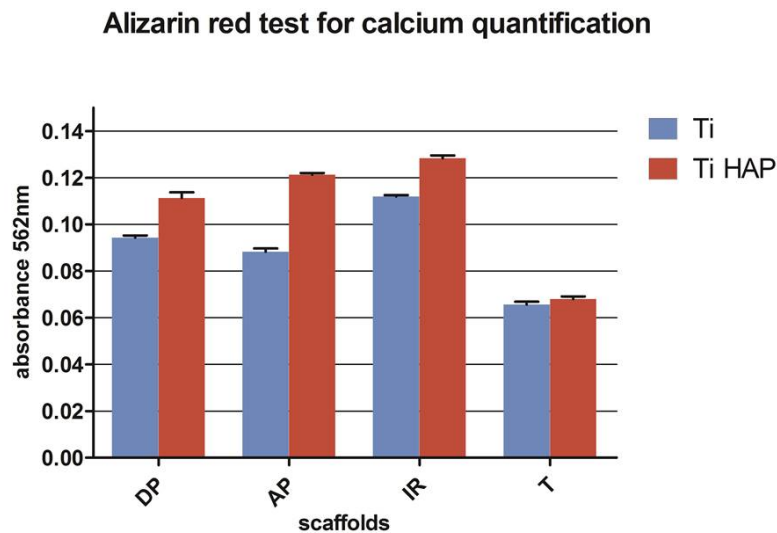


Fig. 4. Quantification of the level of calcium deposits measured on the 18th day using the coloring method with Alizarin Red: Ti - unconditional titanium; (Ti PAH) - titanium

conditioned with hydroxyapatite; (AP) - apical papilla; (DP) - dental pulp; (IR) - inter-radicular bone, (T) - tuberositary bone

If more images are reunited, they must be annotated in such a way that the description of the results will be easy to follow, for example:

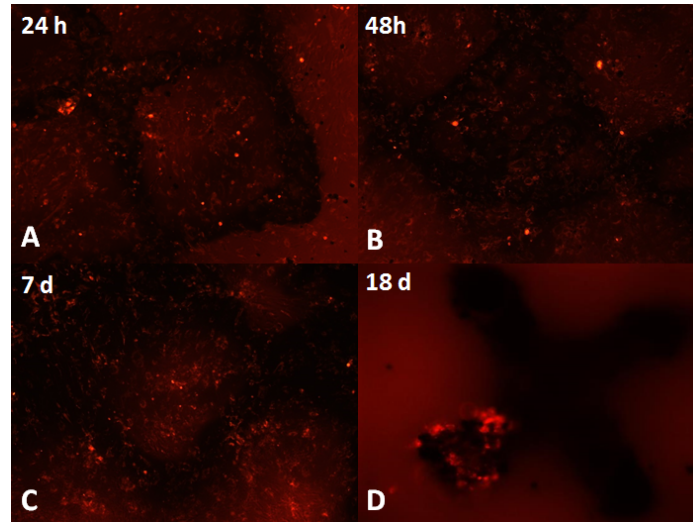


Fig. 5. Fluorescence images of mesenchymal stem cells (MSCs) coloured with PKH26, derived from inter-radicular bone, attached to the surface of the implants studied (10x magnification):
 A. 24 hours; B. 48 hours; C. 7 days; D. 18 days.

Table numbering will be done in order of their appearance in text, with Roman numerals (example: Table I.). If there were tables in the general part of the thesis, the numbering will continue. The table number and title will be noted above its contents. Below the table, the explanations of the abbreviations used will be described, for example:

Table I. Classification of biomaterials, advantages, disadvantages and applications.

BIOMATERIAL	Advantages	Disadvantages	Apps
Metals and metal alloys <i>(e.g. gold, platinum, titanium, steel, chromium, cobalt)</i>	- Resistance - Easy manufacturing and sterilization	- Corrosion - Unfavorable elastic mode - Predisposition to asepticity	- Implants - Screws - Pines - Plates

Ceramics and carbon compounds <i>(e.g. phosphocalcium salts, glass, aluminium oxides and titanium)</i>	<ul style="list-style-type: none"> - Mechanical resistance - Biocompatibility - Corrosion resistance 	<ul style="list-style-type: none"> - Difficulty being shaped - Unfavorable elastic mode 	<ul style="list-style-type: none"> - Dental implants - Bioactive orthopedic implants - Hearing aids
Polymers <i>(e.g. PMMA*, polycaprolactone, polycarbonates, polyurethanes)</i>	<ul style="list-style-type: none"> - Biodegradation - Biocompatibility - Easy modeling and high availability - Acceptable mechanical resistance 	<ul style="list-style-type: none"> - Predisposed to changes in human fluids - Difficult sterilization 	<ul style="list-style-type: none"> - Orthopedic and dental implants - Prosthetics - Matrices for tissue engineering - Drug transport systems
Composite <i>(e.g. dental composites, carbon fibre reinforced with metacrilate)</i>	<ul style="list-style-type: none"> - Excellent mechanical properties - Corrosion resistance 	<ul style="list-style-type: none"> - Cost - Laborious manufacturing methodology 	<ul style="list-style-type: none"> - Porous orthopedic implants - Dental fillings - Catheters and gloves

* PMMA—polymethylmetacrilate

If there is no evaluation data in a table, or not applicable in the study, the following annotations will be made: "-" (not given for the rated item) or N/A (Not Applicable - *Not Applicable* or Unavailable - *Not Available*). These annotations help us highlight data that is not available because there is no application for a particular case or because the result is not available. Color/tone contrasts between rows or columns will be used to easily read the information in the tables, depending on how the data in the table is compared.

Where statistical processing of data has been carried out, the results shall show the statistical relevance of the correlation or difference between the elements compared.

Common mistakes:

- duplication of the presented results: the same results are described in the text and in the table, graph or image;
- the statistical tests are inadequate to the hypothesis or to the relationship between the variables.

3.3.1.4. Discussions

The purpose of this section is to explain the obtained results, also to provide a comparison with the results obtained previously, on the same topic, by other researchers.

Objectives of the Discussion Chapter:

1. The aim has been achieved or not, thus showing the contribution of the work carried out to the medical knowledge in that research field. Validation or invalidation of the initial hypothesis (if the results obtained are in line with the initial expectations);
2. Appreciation of the quality and validity of the results;
3. Comparison of the obtained results with the results of similar studies, published in the literature (data on previous studies should be accompanied by bibliographic references). If there are differences between the observations of other authors and their own results, it must be specified, discussed and explained.

Common mistakes:

- repeating the information in the general part of the thesis;
- repeating the results;
- other results, not included in the "Results" section, are discussed;
- absence of references or the references are not appropriate, for data taken from the literature;
- lack of interpretation of the relevance (clinical and/or statistical) of the obtained results;
- lack of discussion of personal results, in relation to the data from the literature.

3.3.1.5. Conclusions

This chapter presents a brief information, in form of conclusions on the results of the graduates' research.

Note! This section is NOT noted as a chapter.

Common mistakes:

- presenting the conclusions of other studies published in the literature (even if accompanied by the correct citation);
- summarizing what is known in the literature;
- presentation only of the statistical interpretation of the tests applied;
- a wide description of results and discussions.

3.3.1.6. References

Contains a list of all sources of information used by the graduate to write the license thesis (see heading. Citation rules).

Note! The reference section is NOT noted as a chapter.

3.3.2. Elaboration of the Clinical Case Presentations type of thesis

"Always note and record the unusual... Publish it. Place it on permanent record as a short, concise note. Such communications are always of value."

William Osler

This type of license thesis always involves:

1. Presentation of a diagnostic and treatment algorithm.

The student will briefly present the diagnostic and treatment algorithm of the case (with the help of the coordinator of the license thesis), also the student will describe in detail the technical

solution performed for the case (prosthetic restoration, orthodontic apparatus, surgical prosthesis - as appropriate), with emphasis on the particularity of the technique used.

2. Case management presentation:

The main feature of this type of study is launching of a hypothesis leading to the development of a new study.

The general part will present the current state of knowledge, regarding the chosen pathology, depending on the casuistics of the **Special Part**. **The special part** will have the following components: Purpose and Objectives, Materials and Methods, Results and Discussions, Conclusions.

3.3.2.1. Purpose and Objectives

Brief presentation of the respective pathology and/or therapeutic conduct, highlighting the reason why it was decided to present the case (minimum 3 clinical cases).

3.3.2.2. Materials and Methods

Includes presentation of materials and equipment used to carry out the research (with indication of manufacturers) - **What was used? How was it used? Where was it used?**

Briefly describe the instrumentation and equipment (as appropriate) used for the examination and treatment of the cases and the parameters investigated. It will also include, when done with the students' contribution and the brief presentation of the treatment stages. The student will mainly describe the types of materials used to carry out the work and the working technique used.

3.3.2.3. Results and Discussions

The case presentation will contain: patient information (gender, age, the environment from which the patient comes – rural/urban, professional data), the reason for presenting to the doctor, the history of the current disease and associated pathologies, exo-oral and endo-oral clinical examination (+/- general clinical examination), presumptive clinical diagnosis, paraclinical investigations (e.g. laboratory, imaging, etc., the results which must be interpreted), complete diagnosis of the case, differential diagnosis, treatment plan, treatment results, clinical evolution

and possible complications. The objective examination does not specify normal relationships, only pathological changes.

The complete diagnosis of the case must include:

1. The Emergency diagnosis; 2. Diagnosis of preventive oncology; 3. Diagnosis of odontal lesions; 4. Periodontal diagnosis; 5. Edentation and prosthetic diagnosis; 6. Orthodontic diagnosis; 7. Surgical diagnosis; 8. Functional diagnosis; 9. Diagnosis of general conditions.

Only existing information will be written, without specifying, separately, the missing information.

Logical equivalence and chronology of descriptions is very important!

At the **discussion part**, the aspects presented in the introduction part are extended: it is justified to present these cases, a short review of the literature on the topic in which they emphasize the challenges raised, based on other cases in the literature, it is possible to find the limitations and the advantages of the case presentations. The particularity of each case must be addressed in this chapter.

3.3.2.4. Conclusions

The conclusions follow the chapter of **Discussions**, and must summarise the diagnosis and clinical particularities of the presented cases ("key take away **points**"). Also, the added value of this presentation to the clinical and research will be highlighted.

3.3.3. ELABORATION OF THE REVIEW OF LITERATURE

The literature review is defined as a **systematic analysis** of publications on a particular **topic**, which attempts to identify, evaluate, select and present the results of relevant studies.

Unlike other approaches to literature analysis, the systematic analysis uses **a well-defined and uniform strategy**, to identify all relevant studies related to the research topic and present the results of the selected studies.

The Meta-analysis consists in using statistical methods to present the results of the systematic analysis. Not all systematic analyses contain meta-analyses. By combining information from all the relevant studies, meta-analyses can provide more accurate assessments of the effect

of an intervention compared to assessments derived from isolated studies included in the meta-analysis.

A systematic analysis is **NOT** a general narrative report. If certain studies in the literature are randomly described without having an information-searching strategy, then the review of the literature is unsystematic.

3.3.3.1. Introduction

The **Introduction** will set out the premises of the study that underlie the review of the literature, the relevance of the topic and its value in the field of dental medicine/dental technique. Claims related to epidemiology, morbidity, prevalence, mechanisms of action, etc. must be supported by scientific evidence, with bibliographic references.

The introduction will contain: the description of the condition/problem of interest, description of the intervention (example: effectiveness of antibiotic therapy in chronic odontogenic sinusitis/apical periodontitis, prophylaxis of tooth decay in children by administration of fluoride to pregnant women, effect of nicotine consumption in periodontal disease, alcohol consumption and incidence of oral cancer), which is known about the disease/intervention at this time, from the literature, how intervention could be effective, why it is important to develop this systematic analysis. This part will contain: the motivation of the research, the novelty of the theme addressed, the general purpose and objectives of the research. **The objective of a systematic analysis** is to provide a complete summary of the literature, relevant to the research topic. Systematic analyses of randomized, controlled, high-quality scientific trials are crucial for evidence-based medicine. Understanding systematic analyses and how to implement them in medical practice, has become mandatory for doctors. Systematic analyses are also helpful in identifying missing information and the need to carry out further research. Systematic analyses can assess problems related to diagnosis, epidemiology, etiology, therapy, etc. A systematic quality analysis, like any other study, requires a precise, elaborated protocol, before beginning the study.

3.3.3.2. The general part

In the **General Part**, the field from which the topic of the review was selected is presented, arguing the scientific value of the chosen topic. It is necessary to specify what is known at the present moment (exemplified by articles) and what aspects are less or not known at all, the limitations and errors of previous studies. A review of the literature, in the field of the chosen topic can be highlighted.

3.3.3.3. The special part

The **special part** includes: **Purpose and Objectives, Materials and Methods, Results and Discussion, Conclusion.**

3.3.3.4. Purpose and Objectives

Phrasing a clear research topic is the first and one of the most important steps in developing a systematic analysis. Without a clear research topic, it is very difficult to identify appropriate sources and to carry out the search for relevant scientific evidence. The literature notes that many clinical dilemmas remain unanswered - due to difficulty in formulating a relevant research topic and a lack of competence in search for evidence. The objective of the systematic analysis is to be formulated in a single concise sentence. Example: "assessing the effectiveness of different systems for advancing the mandible in the treatment of patients with sleep apnea".

It is preferable to elaborate a hypothesis of explicit re/questions, which will be addressed in the systematic review, with reference to: participants in the study, intervention/interventions made, comparisons to be made and the effect pursued. The "PICO" formula is often useful for formulating the research topic and facilitating the literature search (PICO = **P**articipants, **I**nterventions, **C**omparators, **O**utcomes).

3.3.3.5. Materials and Methods

In this chapter are defined the following:

- Criteria for the selection of studies;

- Strategy to search for studies relevant to the topic of interest;
- Extracting data.

Definition of the criteria for inclusion and exclusion of studies:

The protocol of a systematic analysis should specify “a priori”, the criteria for the inclusion and exclusion of studies. These inclusion/exclusion criteria must have a logical basis and usually, refer to:

- the evaluated population;
- the disease in question;
- the intervention to be studied;
- comparison (witness group: placebo or other interventions);
- the effects of the intervention (the parameters followed);
- the type of studies;
- the period during which the studies were published;
- the language of publication.

Once the criteria for inclusion/exclusion have been established, each potentially eligible study should be analysed for inclusion in the systematic analysis. So, each identified item is verified based on predetermined eligibility criteria (inclusion criteria). The systematic analysis should specify the studies that have been taken into account for inclusion and the specific reason for excluding a particular study. For example, if 25 studies are identified, which might be eligible, these 25 studies must be mentioned, and if some are excluded, specify the reason for each exclusion.

Example: "**Inclusion criteria:** **1.** Patients with asleep nap, mild and medium form, with the Apnea-Hypopnea Index (AHI) > 5 and 10, respectively **2.** The method of treatment represented by any prefabricated or personalised mandible advancement system; **3.** Method of evaluation of the: polysomnography, +/- question questionnaire. **Exclusion criteria:** **1.** Non-relevant article for the subject (title and abstract); **2.** Systematic review articles; **3.** Failure to meet the inclusion criteria.'

Study search strategy:

Systematic analyses are based on a complete and impartial search of studies. The search must follow a well-defined strategy, established before beginning the study, so that the results of the individual studies to be known. The process of identifying studies for inclusion in systematic analysis and sources for the identification of such articles, must be explicitly described. Ideal, searches should not be limited to Medline, but should also be extend to other electronic databases such as Web of Science, SCOPUS, EMBASE, etc.

The databases in which the articles were searched, the keywords used and the limitation filters used in the literature research process will be mentioned.

Example: "A detailed search was carried out in the electronic databases PubMed/Medline, EBSCO, EMBASE and Cochrane. The keywords for the search were: "Obstructive sleep apnea" AND "Oral appliance" AND "Dentistry". Only articles in *extenso* were included, written in English and published in the last 10 years (2010-2020). Another filter used was the selection of articles relating only to studies involving human subjects. In the next stage, the titles and summaries of all articles were evaluated for their importance, in terms of the effectiveness of oral appliances in the treatment of sleep apnea. Where a summary has not provided sufficient information to take a decision on its inclusion or exclusion, the full text of the article has to be consulted for a more detailed review."

Collection of data from studies:

The data must be extracted from each study in a uniform and impartial manner. In general, this is done by using a predefined form, which includes the following elements:

- the eligibility criteria;
- the design of the study;
- population included in the study;
- the number of patients of each sample;
- the intervention;
- the main outcome of the study;
- other effects of studied outcomes.

When planning a systematic analysis, it is desirable to specify how to express the effect/effects pursued. The way the results are expressed may differ from that used in the evaluated primary study.

Example: "The following variables were selected, recorded and summarized in a table: the authors of the research, the year of publication, the type of study, the duration of the study, the number of participants and the criteria of inclusion of participants, the methods of measuring the intervention, the types of mandibular advancement systems and the maximum degree of mandibular protrusion."

3.3.3.6. Results and Discussion

The summary form of the data from the studies must include all the information that will subsequently appear in the text, tables or figures describing the studies included in the systematic analysis, or in the tables or figures presenting the results of the systematic analysis. This process of summarising the data from the studies must be clearly described in the license thesis and it will include:

- Study selection procedure – "Flow chart" (Search chart - see Fig. 6.). Specify: how the studies were selected, excluded studies and the characteristics of the included studies. The number of studies considered after the database search, the number of studies assessed for eligibility and the number of studies included in the systematic analysis, with the reasons for exclusion, will also be mentioned at each stage of the selection process.
- Tables with data extracted from the studies;
- Comparison of results of individual studies;
- Statistical descriptive or +/- meta-analysis;
- Synthesis of the results;
- Discussions.

This chapter will summarize the main results, the quality of evidence (limitations of included studies), limitations of the study search process (lack of search in some databases, lack of access to some studies provided by research, etc.), concordances and discrepancies with other studies or systematic analyzes, and it will explain some particular issues. The chapter will also

contain a general interpretation of the results, mentioning their implications in practice. Suggestions for future research will be provided: what studies should be done in the future, and what details about patients, intervention, comparison and what type of study should be followed.

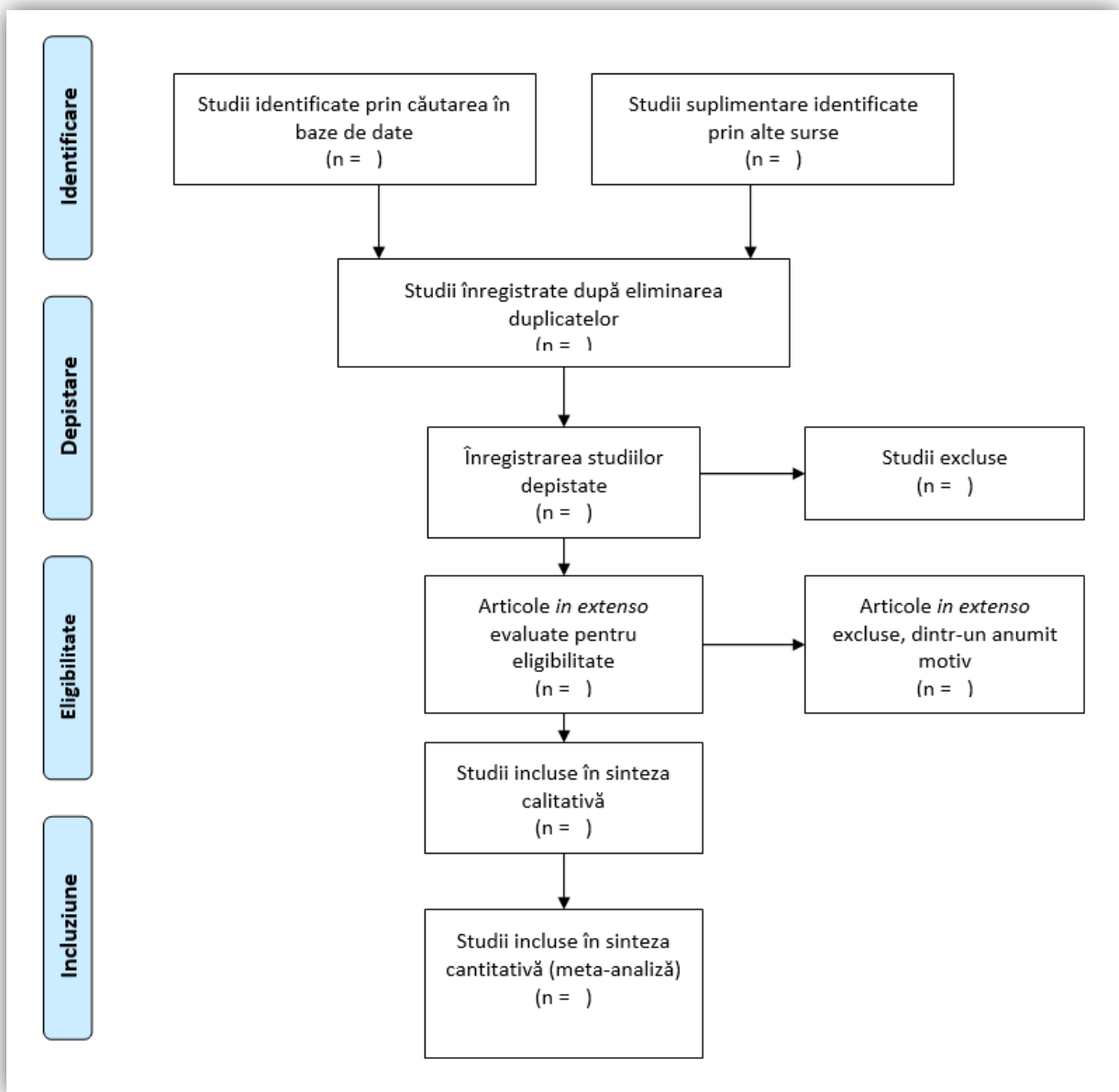


Fig. 6. Diagrama strategiei de căutare

(<http://prismastatement.org/PRISMAStatement/FlowDiagram>)

3.3.3.7. Conclusions

This chapter contains only the conclusions on the results of the systematic research of the literature, which fully reflect the work of the graduate.

3.4. DEFINITIONS OF ABBREVIATIONS

The list of abbreviations will follow the references and it is imperative to be included in the license thesis. In this list will be included, in alphabetical order, and explained each abbreviation, by writing the word, which it replaces. This list is necessary for the reader to fully understand the text, even if they have knowledge of the addressed field or if they read only a certain chapter of the license thesis. When the abbreviation is first used, it will be preceded by the abbreviated word or words in parenthesis, example: "Gentamicin (GEN) is a broad-spectrum antibiotic..."

Example:

LIST OF ABREVIERS

GEN Gentamicin

GBR Guided Bone Regeneration

3.5. CITATION RULES

The bibliographic index is inserted in the text, included in parenthesis, immediately after the statement of the taken information before the point mark that signals the end of the sentence. It may be passed (in parenthesis) and in the middle of a phrase/sentence, if it is considered to be absolutely necessary to distinguish with another citation, which was positioned at the end of the phrase/sentence. In general, the quotes are mentioned at the end of the sentence/phrase, so they don't interrupt its smoothness.

Bibliographic sources will be numbered in the order of appearance in the text ("1" - the first source cited). A source can be cited again throughout the text, using the number assigned to it the first time. The same bibliographic sources cannot have different reference numbers.

The figures/schemes taken over (in the general, exclusive part) must have mentioned, in the legend of the figure, the bibliographic index designating for the source. This bibliographical index, assigned to the legend of a figure, must be integrated into the bibliographic list along with indices assigned in text in the order of their appearance.

If the information taken is also cited, it is recommended to search for the original source that mentioned the idea and include it in the bibliographic list.

In order to prove the quality of the scientific documentation, it is recommended that the studied reference for publications appears in the bibliographic list: books, book chapters, scientific articles describing the results of their recent studies. The list of references must contain at least 25-30 bibliographic titles. There is no upper limit to the number of bibliographic titles.

The system of drafting the bibliographic list, approved by the University of Medicine and Pharmacy "Iuliu Hatieganu" is the Vancouver system. Below are examples of correct writing of bibliographic references.

1. Books cited

Author/s. Title of the book. It's edition. Place of publication (*note: city*): Publishing House; year of publication.

a) Single-author book

Example:

Kotler Ph. *Physiopathology*. Fourth edition. Bucharest: Medical Publishing House; 2004.

b) Book with multiple authors

Example:

Cătoiu I, Teodorescu N. *Consumer behaviour*. Bucharest: Uranus Publishing House; 2004.

c) Book Chapter

The author of the chapter. Chapter title. In: Book editor/editors. The title of the book. Edition. Place of publication (*note: city*): Publishing; year of publication.

Example of a book chapter reference:

Weinsten L, Swartz MN. Pathogenic properties of invading microorganisms. In: Sodeman WA, Sodeman WA, editors. Pathological physiology: mechanisms of diabetes. Philadelphia: WB Saunders; 1974.

2. Original article from existing journals in printed format:

The name of the author/authors followed by the initial of the first name/first name (note: for the initials of the first name no space is used and no point marks between the initials, and if there are 7 or more authors, specify only the first 6, following the expression "*et al.*"). The title of the article. The abbreviation of the name of the magazine in which the article was published in (note: you can search for abbreviations at: <http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?db=journals>), the year of publication of the magazine; volume number (note: represents the number of appearances of the magazine since its launch) (volume number of the current year): pages (note the first and last page of the article).

Example

Pompilli M, Riccardi L, Covino M, Barbaro B, Di Stasi C, Oreice R, et al. Contrast-enhanced gray-scale harmonic ultrasound in the efficiency assessment of ablation treats for hepatocellular carcinoma. *Liver Int* 2005;25(5):954-61.

3. References for original articles from existing magazines in electronic format

Author/s (note: see the instructions from the authors for the article reference format in existing journals in printed format). The title of the article. The abbreviated title of the electronic article [online series] year of publication [quoted date of quote (*today's date*)]; volume number (*without space*) volume number in the current year: number of pages or number of screens in straight brackets. Available from: URL: web address.

Example:

Migon BR, Axelman J, Jeppesen P. Differential X Reactivation in Human Placental Cells: Implications for Reversal of X Inactivation. *Am J Hum Genet* [online series] 2005 [quoted 2005

September];77:355-64. Available from: URL:

<http://www.journals.uchicago.edu/AJHG/journal/issues/v77n3/42333/brief/42333.abstract.html>

4. References for web pages

Format of a web page reference:

Author/s. Page title [online]. Year of publication (read the year month (*note: abbreviated*) the day).

Available from: URL: web address

Example of a web page reference:

McCook A. Pre-diabetic Condition Linked to Memory Loss [online]. 2003 [read 2003 Feb].

Available from: URL: http://www.nlm.nih.gov/medlineplus/news/fullstory_11531.html

3.6 Images used

The images used must be of high quality, with dimensions as close as possible to each other. For the clinical case presentations, the photos should be taken and presented only with the written consent of the patient. They will comply with the requirements of professional photography in dental medicine. For the photographs derived from the personal cases of doctors or dental technicians, other than the coordinators of that thesis, their explicit consent will be requested and the provenance specified; the use of these images is justified only by special situations (pathology or special methods of treatment). The source of all images should be mentioned; it is not recommended to use images from other publications or websites. In exceptional circumstances, if use is required, indicate the provenance and write the bibliographic quota. Some images require the takeover agreement from the publisher. All these situations will be analysed together with the thesis coordinator.

IV. PUBLIC PRESENTATION OF THE LICENSE THESIS

The presentation of the licence thesis to the examination committee is as important as its designing and writing. The final note is the result of the evaluation of the work by the thesis coordinator (qualifier recorded in an original signed report) and of the evaluation of the Licensing Commission. In order to obtain the final mark on the license thesis, the graduate is obliged to present to the committee, the research carried out in the submitted thesis.

4.1. Rules for the presentation of the license thesis

1. Time and place of presentation: graduates will be notified of the date, time and location at which the license thesis presentation will be delivered. The session calendar will be published on UMF website.
2. Presentation of the license thesis: the graduate will present the results of his research in the form of a PowerPoint presentation.
3. The time allocated for the presentation is 8 minutes: 6 minutes to deliver the PowerPoint presentation and 2 minutes are allocated to answer the subsequent questions and discussions between the student and the members of the evaluation committee.
4. The members of the committee may ask the graduate questions on the topic of the license thesis, the methodology (methods) and the resources used. Questions will be asked at the end of the presentation.

4.2. PowerPoint presentation structure

Slide 1: Title of the license thesis; graduate's first and last name; didactic degree, scientific degree (if applicable), coordinator's first and last name;

Slide 2: Presentation table + keywords (if applicable) presented in the Introduction section of the license thesis;

Slide 3: Purpose and objective/objectives of research;

Slide 4: Materials used in the research;

Slide 5: Methods used in the research;

Slide 6-12: Results. Those aspects of the research which are considered relevant to be communicated to the Committee in form of tables, graphs, and figures shall be presented.

Slide 13-14: Discussion and Conclusions

Slide 15: Thank the committee for their attention and asks the committee if there are any questions.

Attention!

On the slides will appear:

- only ideas or keywords, not phrases or sentences; do not write a sentence if 1 or 2 words are enough to explain the data;
- fit each idea into a single phrase/sentence;
- the text on the slide must not be cramped (7-10 rows);
- it is preferred to be presented images instead of text;
- in the results section, insert only figures and tables and as little text as possible;
- the presentation should be free, without reading the text on the slide.

4.3. Grading the licence thesis

Grading

Scale:

The chosen theme - relevant to the field of Dental Medicine - 1p

Selected bibliographic sources - relevant, sufficient in number, way of structuring the general part - 2p

Presentation of the bibliographic list and entry of bibliography in text - 0.5p

Description of materials and methodology used - 1p

Relevance of results and how they are presented in tables and graphs - 1p

Discussion of the results, in accordance with the data in the literature - 1p

Conclusions - 0.5p

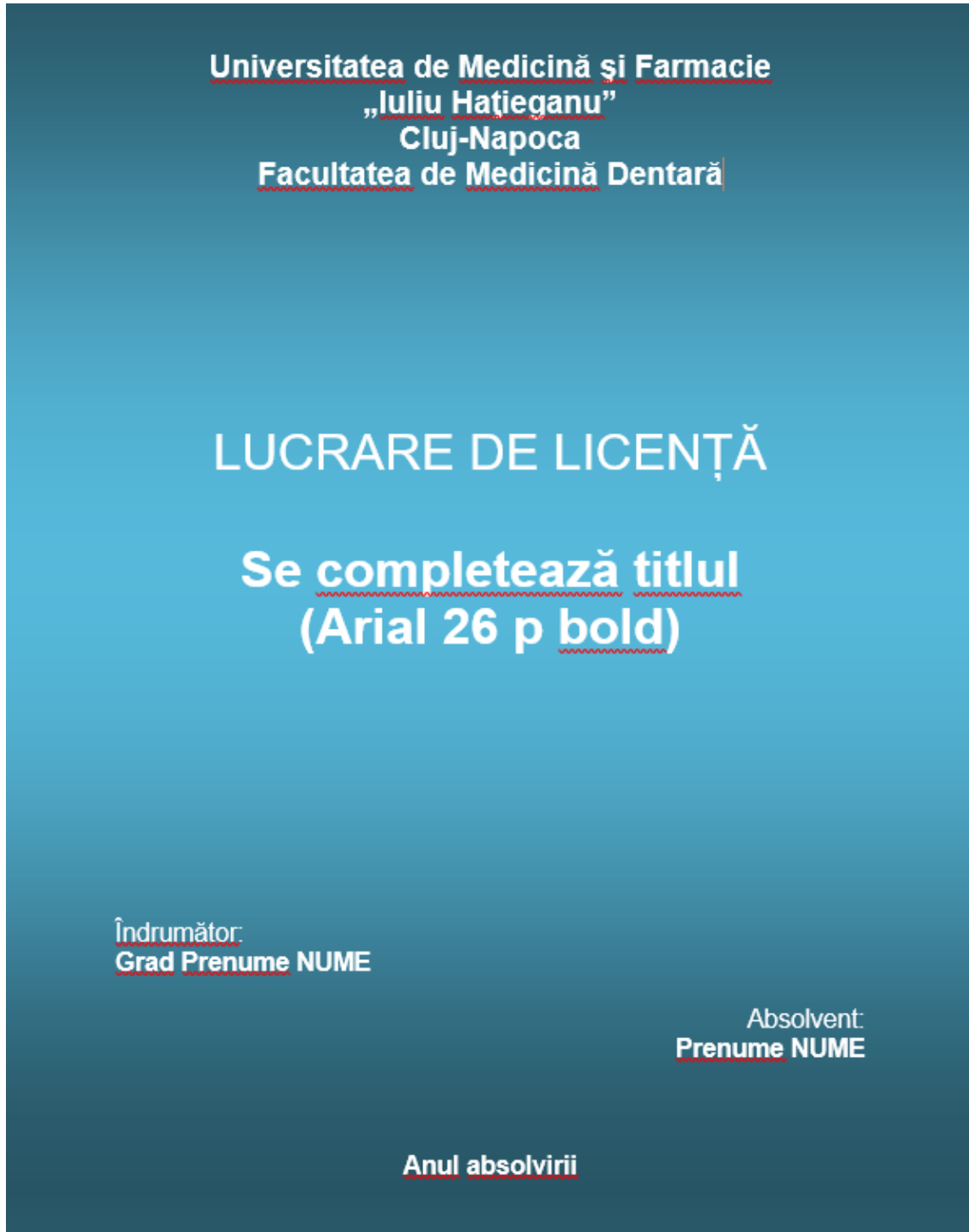
Graphic presentation of the thesis - 1p

Answer of questions - 2p

V. ANNEX

Examples

Annex 1 – Model for designing the cover of the licence thesis



Annex 2 – Title page model for the license thesis

**University of Medicine and Pharmacy "Iuliu
Hatieganu" Cluj-Napoca
Faculty of Dental Medicine**



LICENCE THESIS

Evaluation of dental brushing techniques in a group of school children in Cluj-Napoca

Scientific Guide:

Prof. Dr. Amalia Ionescu

Graduate:

Oana (cas. Tatu) Popescu

2020

Annex 3 – Model for the design of the contents of the licence thesis

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