

**LATVIA UNIVERSITY OF LIFE SCIENCES AND
TECHNOLOGIES**

Faculty of Veterinary Medicine



**Professional higher education study programme
“VETERINARY MEDICINE”**

**CLINICAL CASE REPORT AND ANALYSIS
METHODOLOGICAL GUIDELINES**

Jelgava 2023

The methodological guidelines are designed for the development of Clinical Case Report and Analysis (CCRA) for the students of the Faculty of Veterinary Medicine.

These methodological guidelines are general and do not include specific requirements of individual study courses.

The aim of the methodological guidelines of the CCRA is to provide the students with the necessary information about the requirements of the development, execution and presentation of the CCRA.

The guidelines were developed by the Head of the Educational Methodology Commission (EMC) of the Faculty of Veterinary Medicine (*VMF mācību metodiskā komisija (MMK)*) asoc.prof. D. Bērziņa with participation of the director of the study programme prof. I. Dūrītis, and members of EMC prof. A. Ilgaža, prof. A. Valdovska, asoc.prof. G. Pētersons, asoc.prof. M. Terentjeva, doc. A. Ilgažs, lect. I. Lūsis, guest lect. A. Vekšins and students Ē. Bite and K. Agarska.

The 3rd revised version of the guidance document was developed by: Dean of the Faculty of Veterinary Medicine and Director of the Veterinary Medicine Study Programme, prof. Kaspars Kovaļenko, Vice-Dean of the Faculty of Veterinary Medicine, Head of the Methodological Commission of the Faculty of Veterinary Medicine, guest lecturer Lelde Tītmāne. Prof. Aivars Bērziņš, Assoc. prof. Laima Liepa, asoc. prof. Lauma Mancēviča, Assoc. Inga Pigiņka-Vjačeslavova, guest lecturer Olga Rabočaja, 5th year students Baiba Jermolājeva and Mārcis Eihmanis.

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1. THE OBJECTIVE, TASKS AND REQUIREMENTS FOR THE CLINICAL CASE REPORT AND ANALYSIS

Clinical Case Reports and Analysis (CCRA) is a requirement for the students of veterinary medicine in the study courses that are indicated by the Methodological Commission (Table 1). Its objectives are:

1) To systemise, increase and establish the knowledge and practical skills of the students in research of veterinary medicine;

2) To acquire and develop the practical research skills in the relevant field of veterinary medicine;

3) To encourage the development and presentation of the practical and research work and the acquisition of the veterinary medicine research methods (selection of the literature sources, analysis, critical evaluation, investigation of the research material, interpretation of the results etc.);

4) To acquire the principles of the structure of a scientific paper and the principles of making bibliographic references.

When working on the **CCRA**, the following **requirements** should be taken into consideration:

1) Analysis should be performed in the indicated study course and in its relevant subject previously defined by the supervisor of the course or the lecturer of the study course;

2) In-depth investigation of the subject should be based on bibliographic study and use of appropriate methods, the details of which are determined in each study course separately;

3) The structure of the work should provide a logical and reasoned discussion and solution of the problem by applying appropriate use of scientific style of language based on the individually indicated objectives and tasks in the corresponding study course programme.

The CCRA subjects and volume is defined by the lecturer of each study course and the specific methodological instructions for its development are described in the CCRA guidelines. Every student is responsible for the quality, scientific justification of the conclusions, correct structure and punctual submission of CCRA.

For a successful and timely development of the CCRA it is advised to follow a step by step approach to writing the CCRA and to adhere to the specific work completion stages. When starting the work with CCRA, it is advised to make an objective, tasks and a work plan approved by the supervisor of the CCRA (the supervisor might be the supervisor of the subject or the lecturer of the corresponding study course). Those steps should be followed by the bibliographic research and analysis, writing of the text, consulting with the supervisor, making the necessary corrections, repeated review and making the final improvements of the work. The work should be written and handed in electronically, in the LBTU E-study platform (the lecturer can assign students to hand in the CCRA in paper format, in addition to handing it in E-studies), with or without a public presentation.

2. STRUCTURE, CONTENTS AND EDITING OF THE CLINICAL CASE REPORT AND ANALYSIS

The CCRA of the study course should include the following parts in this exact order: title page, table of contents, list of abbreviations used in the CCRA (if it is required), introduction, literature review, materials and methods, results and discussion, conclusions, references and appendices (if required). In certain study courses, the CCRA might be structured as a Patient's history or The Protocol of Autopsy etc. by including the necessary chapters indicated in the requirements of the specific study course programme. Additionally to the general guidelines, the specific requirements of the CCRA are defined by the supervisor of the study course or the lecturer in the beginning of the subject.

2.1. Title page

The title page must be formatted as indicated in the example in Appendix 2. The title page must be formatted with a 6pt spacing between paragraphs, with 20mm margins from the right side, left side, top and bottom of the page.

The title page must include the following information:

- LATVIA UNIVERSITY OF LIFE SCIENCES AND TECHNOLOGIES - font *Times New Roman*, character size 18pt, block letters, bold;
- Faculty of Veterinary Medicine, institute, under which the CCRA is being written - font *Times New Roman*, character size 16pt, bold;
- Name, Last Name – font *Times New Roman*, character size 18pt;
- Clinical Case Report and Analysis in study course “Title of study course”. *Times New Roman*, 18 pt. character size;
- TITLE OF THE TOPIC - font *Times New Roman*, character size 22pt, block letters, bold;
- Supervisor, academic position, Name, Last Name - font *Times New Roman*, size of characters 14pt;
- Executor of CCRA, Matr. No. [...] Name, Last Name - font *Times New Roman*, character size 14pt;
- Jelgava [year] – font *Times New Roman*, character size 14pt.

2.2. Contents

The contents contain all titles of the chapters and subchapters that are located after the contents, numbered in numbering sequence, indicating the number of the appropriate page. The CCRA chapters (*Literature review, Results and analysis*) and their subchapters are numbered. The rest of the sections are not numbered. The example of the contents can be found in appendix 3.

2.3. List of abbreviations and symbols used in the CCRA

This section is included in the CCRA if there are more than 10 nontraditional abbreviations in the CCRA. Otherwise, the abbreviation is deciphered with a detailed explanation, e.g. Food and Veterinary Service (FVS), when using the abbreviation for the first time in the text. While making the list of decipherments, the abbreviations, symbols and special

terms must be arranged in columns alphabetically, with the decipherment on the right side. The generally accepted abbreviations, symbols and terms are not included in the listing.

Example:

ABBREVIATIONS USED IN WORK

Abbreviations	Explanation
A	Adenine
bp	Base pair
C	Cytosine
DNS	Deoxyribonucleic acid

2.4. Introduction

In the introduction, the student justifies the choice of the topic, its significance and topicality, and gives a preview of the research problem. In the end of the introduction, one goal of the research is formulated and several enabling objectives for reaching the goal are defined and coordinated with the supervisor. The goal of the CCRA must be formulated concisely, i.e. it must be brief, precise and specific. There must be several enabling objectives listed and they must be relevant to the topic, executable, precise, and have to reflect what has to be done during the analysis in order to develop the CCRA.

2.5. Literature review

The literature review contains an analysis of the theoretical information corresponding to the topic, and a broad summary of findings from the reviewed literature and other sources of information on the research topic is presented systematically, citing the research results of other authors. Direct reprinting of other authors' publications is not permitted when creating this and all the other chapters of the CCRA. Citations must be used when quoting publications. Particular attention should be paid to determining the degree of reliability of the literature, i.e. books, peer-reviewed articles and research papers should be used.

2.6. Materials and methods

In the methodology subchapter, the author provides the characterization of the research object, the data collection methodology, and the data processing methodology, in which the preformed calculations of the research are characterized in detail.

2.7. Results and discussion

In this chapter, the results of the performed calculations are reflected and analyzed in detail, illustrating the text with tables and images. The insertion of tables or graphic materials

without being referred to in the text is not permitted. When developing this chapter, the author interprets and analyzes the results of their calculations and compares them to the results obtained in researches of other authors.

2.8. Conclusions

The conclusions have to provide a summarized answer to the enabling objectives, the conclusions are short and summarizing. The conclusions are a synopsis of the most important results of the author's research. Numerical material can be included in the conclusions, but general knowledge or results that were not obtained during the research cannot be included.

2.9. References

In all cases when research or ideas of other authors or previously published research of the author of the CCRA are used in the work, there must be a reference to these sources. Each of the listed references must be cited in the CCRA.

Items in the references are numbered and listed in alphabetical order, all of the bibliographic information of all sources used in writing the CCRA (books, scientific articles, periodicals, internet sources etc.) are included in the list. All sources used are listed alphabetically by the first letter of the author's last name or the first letter of the title of the article, if the author is unknown; normative acts are listed according to the type of act (laws, CM regulations, procedures, orders, instructions etc.).

If there are sources used in the work, which are written in Cyrillic characters (Russian), they must be listed at the end of the reference list.

table 2.1.

Requirements for formatting references and in-text citations

Source	Reference with example	In-text citation
Normative acts and Laws	Type and No. of the act , title of the act, date of adoption// date of access. <u>Example:</u> Cabinet Regulation No. 558 <i>Procedures for Drawing up and Preparing Documents</i> , 4 September 2018 [online] [accessed on 13 May, 2022]. Available from: https://likumi.lv/ta/id/301436-dokumentu-izstradasanas-un-noformesanas-kartiba Law , title (year of adoption)// date of access <u>Example:</u> Law of RL <i>Veterinary Medicine Law</i> (2001) [online]. [accessed on 13 May, 2022] Available from: https://likumi.lv/ta/id/20436-veterinarmedicinas-likums	...text (RL CM 558, 2018) ...text (Veterinary Medicine Law, 2001)
Book by one author	Author's Last name, Initial. (publishing year) <i>Title of the book in italics</i> . Edition (if published repeatedly). Place of publication: Publisher. Total number of pages or the page/pages used. <u>Example:</u> Neville C. (2010) <i>The Complete Guide to Referencing and Avoiding Plagiarism</i> . 2nd Ed. Maidenhead: Open University Press. 300 p.	...text (Neville, 2010)

Source	Reference with example	In-text citation
Book by 2 to 3 authors	Author's Last name, Initial., Authors Last name, Initial. and Authors Last name, Initial. (publishing year). <i>Title of the book in italics</i> . Edition (if published repeatedly). Place of publication: Publisher. Total number of pages or the page/pages used. <u>Example:</u> Fresenius W., Quentin K. E., Schneider W. (1988) <i>Water Analysis</i> . Berlin–Heidelberg: Springer Verlag. 804 p.	...text (Fresenius, Quentin, Schneider, 1988)
Book by 4 or more authors	All authors' Last names, Initials. (publishing year) <i>Title of the book in italics</i> . Edition (if published repeatedly). Place of publication: Publisher. Total number of pages or the page/pages used. <u>Example:</u> Campbell N. A., Murry A., Bell E., Fisher T. (2008) <i>Biology</i> . 8th Ed. London: Pearson. 355 p.	...text (Campbell et al.)
Book with an editor	Author's surname Initial. (ed.) (publishing year) <i>Title of the book in italics</i> . Edition (if published repeatedly). Place of publication: Publisher. Total number of pages or the page/pages used. <u>Example:</u> Fontana-Giusti G. (ed.) (2008) <i>Designing Cities for People: Social, Environmental and Psychological Sustainability</i> . London: Earthscan.	...text (Fontana-Giusti, 2008)
E-book	Author's Last name Initial. (publishing year) <i>Title of the book in italics</i> . [Online] Title of series and volume – if it is known. Edition (if published repeatedly). Place of publication: Publisher. Available from – URL. [accessed on date] <u>Example:</u> Sadler P. (2003) <i>Strategic Management</i> . [Online] Sterling. VA Kogan Page. Available from: http://www.netlibrary.com/reader/ . [Accessed on 6th May 2022].	...text (Sadler, 2003)
Journal article (electronic/online) (one author)	Author's Last Name Initial. (publishing year) Title of the article. <i>Title of the journal</i> . Volume No. (number of the section/month), pp. doi: <u>Example:</u> Bokkenheuser V. (1970) <i>Vibrio fetus</i> infection in man. <i>American Journal of Epidemiology</i> . 91(4): pp. 400-409. doi: 10.1093/oxfordjournals.aje.a121150.	...text (Bokkenheuser, 1970)
Journal article (electronic/online) (2 authors)	Last Name Initial of all authors. (publishing year) Title of the article. <i>Title of the journal in italics</i> . Volume No. (number of the section/month), pp. doi: <u>Example:</u> Bokkenheuser V., Fisher T. (1999) <i>Vibrio fetus</i> infection in man. <i>American Journal of Epidemiology</i> . 16(4): pp. 20-29. doi: 10.1093/oxfordjournals.aje.a121150.	...text (Bokkenheuser & Fisher, 1999)

Source	Reference with example	In-text citation
Journal article (electronic/online) (3 and more authors)	Last Name Initial of all authors. (publishing year) Title of the article. <i>Title of the journal in italics.</i> Volume No. (number of the section/month), pp. doi <u>Example:</u> Kovaļenko K., Roasto M., Šantare S., Berziņš A., Hörman, A. (2014) Campylobacter species and their antimicrobial resistance in Latvian broiler chicken production. <i>Food Control</i> , 46. pp. 86-90. https://doi.org/10.1016/j.foodcont.2014.05.009	...text (Kovaļenko et al., 2014)
Journal article (printed)	Rules apply as before, except no doi number is necessary. Last Name Initial of all authors. (publishing year) Title of the article. <i>Title of the journal in italics.</i> Volume No. (number of the section/month), pp. <u>Example:</u> Miceli D.D., Pignataro O.P., Castillo V.A. (2017) Concurrent hyperadrenocorticism and diabetes mellitus in dogs. <i>Research in Veterinary Science</i> . 115, p.425-431.	...text (Miceli et al., 2017)

2.10. Appendices

This chapter contains documents and informative data, if they are too detailed and bulky to be inserted in the text. Surveys, voluminous tables and other materials are included in the appendices if they are referenced in the text. The number of pages of the appendices are not included in the total volume of the CCRA.

3. FORMATTING

3.1. Formatting of the text

Paper, font, character size, page numbers, spacing

- The text is formatted on A4 pages with a 30mm margin from the left side and 25mm margins from the right side, top and bottom of the page.
- Word processed using font Times New Roman, the text is aligned on both sides (Justify) and the first line of the paragraph has an indent of 10mm from the left side of the text.
- If the author wants to highlight a certain part of the text, it may be done using **bold**, underline or italic.
- Font size of the text is 12pt, single line spacing (1,0), no extra space between paragraphs.
- Font size for titles – 14pt, bold, block letters (*All Caps*).
- Font size for subchapter titles – 12pt, Bold.
- The pages are numbered consecutively in Arabic numerals in the middle of the footer of the page, character size 12pt. The title page, contents, the pages between them, and the page with the title “APPENDICES” are not numbered, but are included in the numeration.

Chapters and subchapters

- The text is divided in chapters and subchapters which are numbered with Arabic numbers, except the contents, introduction, conclusions, suggestions, references and appendices.
- The CCRA is written in the grammatical third person (without the use of the first-person pronoun “I”) using past or present tenses. The information can be presented without indicating a certain doer, e.g., “the author believes”, “during the research, it was found that...”
- The main chapters and their titles must start on a new page, but the subchapters must be written as a continuation of the text. All titles must be centered horizontally to the page. Full stops are not used after the titles and they are not underlined or italicized. Titles of subchapters are written on a new page only in case if it is impossible to write at least two lines under the title.
- The line spacing between the titles, subchapter titles, and the text is a single text line (1,0), but two text lines between the text and the title of the next subchapter.
- The title “APPENDICES” (character size 18pt – 24 pt., bold, placed in the center of the text row and closer to the top of the page) is written on a separate page before the appendices. Each appendix is numbered on the top right part of the page, e.g., Appendix 8., under which the title of the appendix is written in the center of the text row.
- Citations to elements of the text must be indicated in round brackets, e.g. (figure 2.1.), (table 3.5.).

2.2. Formatting tables and images

Tables contain the qualitative or quantitative (in numerical format) data obtained during the research. The table must be comprehensible even without reading the explanatory text.

- The title of the table is located over the table, in the center of the text row, in bold, a full stop is not used at the end of the title.
- The tables are numbered in sequence within each chapter.
- The number of the table is placed on the right side of the page above the title, using the base font, e.g. “table 3.2.”. There must be a space of one text line between the text and the table number, as well as between the title of the table and the table itself.
- The right and left side borders of the table must coincide with the borders of the text.
- If the table continues on to multiple pages, the row or column titles must be repeated on each page. In this case the title of the table does not need to be repeated on each page, but at the top of the table the author must write, e.g., “continuation of table 2.9.” or “end of table 2.9.”
- All cells of the table must be filled out. If multiple cells contain the same data, it must be written repeatedly. Numbers must be centred in the cells.

Example of formatting a table:

table 3.1.

Title

No.	Description	Description

An image includes drawings, photographs, schemes, diagrams and other illustrations of the text. The image must coincide with the text, it must be comprehensible even without reading the explanation.

- The image must be centred on the text row.
- The serial number of the image must be located under the table, in the centre of the text row (the numeration must be created in sequence within each chapter, e.g., “figure 1.1.” and the title of the figure/image in bold) Character size 12pt.
- It is not recommended to use text in the figures and images.
- If the image has been obtained from an information source, it is obligatory to give a citation to the source of information.

Example of the figure:



Figure 3.1. **Title.** [Reference]

4. SUBMISSION, PRESENTATION AND EVALUATION

CCRA must be submitted on the date determined by the lecturer of the study course. Assessment of work submitted after the deadline is carried out in accordance with the procedures laid down by the course leader.

The CCRA is handed in to the lecturer of the study course, who is grading it. The work has to be handed in electronically, in the LBTU E-study platform. The lecturer can assign students to hand in the CCRA in paper format, in addition to handing it in E-studies. The file has to be saved in pdf format and titled using the last name and name of the student and their matriculation number, for example, Berzins_Janis_VM55555. The title of the file should not include diacritic marks, cedillas, etc.

CCRA is evaluated by the supervisor of the study course, the lecturer of the study course or a commission of teaching staff. If a defence of the CCRA is required, the date shall be set by the supervisor of the study course or the lecturer of the study course. The presentation for CCRA should be 5-7 minutes long (or as indicated by the lecturer or the supervisor of the study course). The presentation should include information about the chosen subject and analysis. It is not advisable to read all the text from the slides, the student should be able to present the relevant topic freely. After the presentation the student must answer the questions of the lecturer or the teaching staff commission (other students participating in the listening may also ask questions). In the evaluation of the CCRA the quality of the presentation and performance, answering to questions and ability to competently discuss the chosen subject will be taken into consideration.

APPENDICES

The list of study courses of Veterinary Medicine that require Clinical Case Report and Analysis (CCRA)

No.	Relevant institute	Course code	Title of study course	CP	Semester
1.	Preclinical Institute	Vete6023	Physiology II	3	4-sem.
2.	Preclinical Institute	Vete4036	General Pathology I	1,5	4-sem.
3.	Preclinical Institute	Biol1021	Animal Biology, Ecology and Ethology III	1,5	4-sem.
4.	Institute of Food and Environmental Hygiene	Vete3025	Bacteriology, Mycology, Virology III	3	5-sem.
5.	Clinical Institute	Vete4111	Clinical and Laboratory Diagnostics II	3	6-sem.
6.	Clinical Institute	Vete4113	Surgery Techniques and Topographical Anatomy II	3	6-sem.
7.	Clinical Institute	Vete4114	Anaesthesiology and Emergency	2	6-sem.
8.	Institute of Food and Environmental Hygiene	Vete3043	Animal Welfare, Environment Hygiene II	3	6-sem.
9.	Preclinical Institute	Vete4100	Animal Postmortem Necropsies	3	7-sem.
10.	Clinical Institute	Vete4101	Radiology II	2	7-sem.
11.	Institute of Food and Environmental Hygiene	Vete4045	Epidemiology	2	7-sem.
12.	Institute of Food and Environmental Hygiene	Vete4115	Parasitology and Parasitic Diseases II	3	7-sem.
13.	Clinical Institute	Vete4099	Small Animal Internal Medicine II	3	8-sem.
14.	Clinical Institute	Vete6040	Internal Medicine, Herd Health III	3	9-sem.
15.	Clinical Institute	Vete4097	Farm Animal Reproduction II	3	9-sem.
16.	Institute of Food and Environmental Hygiene	Vete4107	Infectious Diseases I	4	9-sem.
17.	Preclinical Institute	Vete4106	Special Pathology and Forensic Veterinary Medicine III	1	10-sem.
18.	Clinical Institute	Vete6039	Pharmacology, Pharmacotherapy and Toxicology III	1	10-sem.
19.	Institute of Food and Environmental Hygiene	Vete5015	Organisation of Veterinary Services II	2	10-sem.
20.	Institute of Food and Environmental Hygiene	Vete4117	Food Chain control	2	11-sem.
21.	Institute of Food and Environmental Hygiene	Vete4119	Diseases of Miscellaneous Animals II	3	11-sem.
22.	Institute of Food and Environmental Hygiene	Vete4103	Food Toxicology	2	11-sem.
23.	Institute of Food and Environmental Hygiene	Vete4044	Foodborne Diseases	2	11-sem.
24.	Institute of Food and Environmental Hygiene	Vete4074	Food Hygiene and Inspection II	3	11-sem.
25.	Clinical Institute	Vete4079	Ophthalmology	1,5	Elective
26.	Clinical Institute	Vete3001	Veterinary Dentistry	1	Elective

**LATVIA UNIVESRITY OF LIFE SCIENCES AND
TECHNOLOGIES (18p)**

Faculty of Veterinary Medicine (16p)

... Institute (16p)

... year student [Name and Last name] (18p)

Clinical Case Report and Analysis in study course

“[Name of the study course]” (18p)

[TITLE OF THE SUBJECT] (22p)

Supervisor: _____ academic position, Name Last name (14p)
Signature, date

Executor: _____ Matr. No. [...] Name Last name (14p)
Signature, date

Jelgava 2023 (14p)

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