Guidelines to independent training on the academic discipline "BASIS OF SCIENTIFIC RESEARCH" for students of training directions 6.030601 "Management", 6.140103 "Tourism" of all forms of study
Guidelines to independent training on the academic discipline "Basis of Scientific Research" for students of training directions 6.030601 "Management", 6.140103 "Tourism" of all forms of study / compiled by O. Myronova, O. Mazorenko. – Kh. : S. Kuznets KhNUE, 2016. – 41 p. (English)

The content and controlling tests needed to perform the independent training are presented. The basic points that will help students in preparing for class studies and performing independent work on the academic discipline are considered. The content and requirements for writing a scientific research report are provided.

Recommended for students of training directions 6.030601 "Management" and 6.140103 "Tourism".

Подано зміст самостійної роботи відповідно до тем дисципліни та тести для контролю, необхідні для здійснення самостійної роботи. Розглянуто основні моменти, які допоможуть студентам у підготовці до аудиторних занять та виконанні самостійної роботи з навчальної дисципліни. Наведено зміст та вимоги до написання науково-дослідної роботи.

Рекомендовано для студентів напрямів підготовки 6.030601 "Менеджмент" і 6.140103 "Туризм".

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Introduction

These methodical recommendations fulfill the need of the bachelor programs by providing students with a useful guide to undertake a piece of scientific research.

The academic discipline “Basis of Scientific Research” requires students to do a scientific research report in their third year of study. Although the nature of these projects varies with science directions, most involve an open-ended investigation into a novel scientific problem. The term a “scientific research report” is used to describe these activities.

The goal of scientific research is report. The aim of these methodical recommendations is to give students the information and skills they need quickly and easily so that students can write confidently using the style and structure of scientific research papers.

The content of independent training

Theme 1. Science and scientific thinking. Research technology
Agenda:
1. Searching possible topics of scientific research.
2. Decision making about the topic for scientific research.
3. Formulating the actuality of the chosen scientific research.
4. Making an overview of the existing scientific and practical publications about the chosen topic.
5. Determining the scientific and applied problems of the chosen topic.
6. Developing the goal and objectives of scientific research.
7. Formulating the object and subject for the chosen scientific research.
Recommended literature: [1; 2; 6; 9].

Theme 2. Methods of working with concepts
Agenda:
1. Determining the basic concepts which illustrated the context of the chosen scientific research.
2. Formulating the definitions of the concepts made by as many authors as possible.
3. Determining the genus and specifies of the concepts.
4. Making the morphological analysis of the concepts in the subject area under research.
5. Formulating the author’s definitions of the analyzed concepts.
6. Finding the classifications of elements of the subject area under research.
7. Finding the advantages and disadvantages of the existing classifications of concepts.
8. Determining the features for classification of the basic concepts under research.
9. Making the author’s classification of the needed concepts.

Recommended literature: [2; 5; 8; 9].

Theme 3. The technology of working with literature
Agenda:
1. Choosing the scientific article under the topic of the research.
2. Analyzing the structural elements of the scientific article.
3. Making a decision of writing the author’s article under the topic of scientific research.
4. Formulating the actuality of the article.
5. Determining the goal of the article.
6. Giving the main proposals of the research.
7. Summarizing the research results which are illustrated in the article.
8. Writing the abstract for the article.
10. Formatting the article to meet the journal requirements.

Recommended literature: [2; 4; 5; 8; 10].

Theme 4. Presentation of research result
Agenda:
1. Compiling a bibliography of publications on the subject of scientific research.
2. Making descriptions for each point of the bibliography.
3. Checking the bibliography according to the rules for it.
4. Finding the format for presentation of the research results.
5. Choosing the material (figures, tables, etc.) for illustrating the results of the scientific research.
6. Completing a presentation of the research results.
7. Writing a short report for presenting the scientific research results.
8. Training performance for the audience.

*Recommended literature:* [2; 3; 7; 8].

**Theme 5. Research methods and models**

*Agenda:*

1. Making suggestions about possible methods which are appropriate for the chosen scientific research.
2. Using methods for the theoretical part of the scientific research: analysis; synthesis; classification; abstraction; formalization; analogy; modeling; idealization; deduction; induction etc.
3. Using the empirical methods of the scientific research: surveillance; experiment; measurement; comparison.
4. Choosing the appropriate model for the chosen scientific research.
5. Building the model for scientific research and making needed calculations.
6. Justification of the suggested model for scientific research.

*Recommended literature:* [1; 2; 5; 6 – 9].

**Tests for controlling the independent training**

**Theme 1. Science and scientific thinking. Research technology**

*Questions (compiled using [13–15]):*

1. What is the difference between a keyword search and a subject (controlled vocabulary) search on a database? Check all appropriate:
   a) a keyword can appear anywhere in the citation, article, or a part of the record that comes up as your result;
   b) a subject is a category or topic assigned to a book or article when it is placed in a database;
   c) all of the above;
   d) none of the above.

2. Which of the following statements is true?
   a) subject searches produce better (more related) records;
   b) keyword searches produce better (more related) records; they usually produce the same lists of records; I don't know.

If you need to narrow your research topic, which search will help you narrow your topic?
   a) teaching and reading;
b) teaching or reading.

4. What is meant by the phrase “full-text” in research database search results listing?
   a) the article is chock full of information;
   b) the article is fully indexed to other text sources; the entire article is available online; the article is available for purchase.

5. The difference between experimental and quasi-experimental designs is that:
   a) the latter lack a control group;
   b) experimental designs produce more reliable data;
   c) the latter designs have more ecological validity;
   d) parametric tests can only be used reliably with the former type of design;
   e) participants are allocated to conditions randomly in an experimental design.

6. Which of the following statements are true about Wikipedia? Check all appropriate:
   a) because anyone can edit the articles in Wikipedia, the information is always up-to-date, accurate and reliable;
   b) Wikipedia is a good place to start when you want to find general information about a topic;
   c) Wikipedia should not be used without verifying the information in reliable sources such as primary research articles, review articles, field guides, websites and databanks that are produced by recognized research organizations;
   d) all of the above;
   e) none of the above.

7. A research database is superior to a search engine because (check all apply):
   a) the authority and sources have gone through some evaluation process;
   b) it is organized by both human and electronic brain power;
   c) the text comes from verifiable and reputable sources;
   d) all of the above;
   e) none of the above.
8. To be concerned with ontology is to study:
   a) reading;
   b) what exists;
   c) ethical decisions;
   d) correlations.

9. Which of the following factors should not influence the decision when one is selecting a topic or problem for research?
   a) Will solution of the problem advance knowledge in my field?
   b) Will I be able to prove that my previously held beliefs are true?
   c) Will the study lead to the development of other investigations?
   d) Is the topic or problem amenable to research?

10. Statements or predictions that are tested by collecting and analyzing objective evidence are called:
    a) assumptions;
    b) indicators;
    c) hypotheses;
    d) premises.

**Theme 2. Methods of working with concepts**

Questions (compiled using [12 – 15]):

1. Plagiarism is...
   a) acceptable when it is intentional;
   b) acceptable when it is unintentional;
   c) never acceptable in any form;
   d) acceptable if the source gives you the OK.

2. Operational definitions are encouraged in research in order to:
   a) conform to the requirement of statistical analysis;
   b) increase the probability that experiments will succeed;
   c) make terms used in a study as explicit as possible;
   d) make educational research more easily understood by laypersons.

3. A problem statement is an expression of dilemma or disturbing situation that needs investigation:
a) true;  
b) false.

4. The mean is:  
a) a summary of some data estimated by adding all the numbers, and dividing by the number of numbers minus one;  
b) a summary of the data that is a measure of the population rather than the sample;  
c) a summary of some data that is always halfway between the maximum and minimum value of the data;  
d) a summary of the data in terms of the most common value of the data;  
e) none of the above.

5. The proposal is comprehensible to only expert in the field:  
a) true;  
b) false.

6. The exact verbatim excerpt from the text or utterance – is:  
a) reference;  
b) citation;  
c) insertion;  
d) footnote.

7. The concepts of “intelligence” and “complex mental properties of the person” according to the type of relations between them:  
a) equivalent;  
b) intersecting;  
c) in respect of subordination;  
d) in respect to exceptions.

8. Logical operation whereby through reducing the content of the concept the scope of it is expanding:  
a) synthesis;  
b) limitation;  
c) definition.
9. What relationship exists between the volume and content of the concept?
   a) directly proportional;
   b) inversely proportional.

10. The concept of “beautiful girl” by content is:
    a) single;
    b) total;
    c) empty.

Theme 3. The technology of working with literature
Questions (compiled using [13 – 15]):
1. When marking materials, the lesson suggests you do all of the following except:
   a) highlight supporting materials that look interesting;
   b) copy & paste materials in your speech to use later;
   c) save all of the information you find from a library database;
   d) keep this research in a three-ring binder;
   e) review the information.

2. What are the three areas to master in the sourcing in research papers?
   a) quoting, paraphrasing and summarizing;
   b) quoting, paraphrasing and notation;
   c) condensing, summarizing and quotation;
   d) notation, quotation and rotation;
   e) quoting, plagiarism, paraphrasing.

3. A reader can clearly see where one works cited entry ends and the next begins because:
   a) there is a bullet point in front of each entry;
   b) there is an extra space between each entry;
   c) each entry is numbered;
   d) the first line of each entry is not indented, whereas each subsequent line of each entry is indented;
   e) no answer is correct.
4. What does it mean: to plagiarize?
   a) to steal or pass off the ideas or words of another as your own;
   b) to pretend to know things that you don't really know;
   c) to add citations to information that you never really looked at;
   d) to make up information and pretend it is true;
   e) to attribute a comment to someone that they never actually said.

5. Non-fiction books are arranged on the library shelves:
   a) by title;
   b) by publisher;
   c) by subject;
   d) by author’s first name.

6. Journals differ from magazines in that:
   a) journals are published periodically;
   b) journals are important sources of academic research;
   c) journals are available by subscription;
   d) journals have volume numbers.

7. Scholarly articles are most often published in:
   a) magazines;
   b) journals;
   c) newspapers.

8. A primary source is:
   a) an original document such as a diary, letter, etc.;
   b) the first book or journal article that is written on a topic;
   c) an article or book that extensively analyzes a topic;
   d) a collection of critical essays.

9. The parameters of formatting bibliography do not apply:
   a) language;
   b) subject;
   c) volume;
   d) period.
10. What are the basic terms of an article writing technique?
   a) constructing the thesis;
   b) formulating the hypothesis;
   c) constructing the article plan;
   d) presentation of research methodology.

Theme 4. Presentation of research result
Questions (compiled using [12 – 15]):
1. Confidentiality requires that:
   a) it be impossible to connect data to individuals;
   b) all data be collected anonymously;
   c) access to collected data be limited to research staff;
   d) participants not be asked for personal information.

2. Research is not systematic inquiry that uses disciplined methods to answer questions or solve problems.
   a) true;
   b) false.

3. Background of the problem need to provide a brief, focused review of the literature:
   a) true;
   b) false.

4. The null hypothesis is always:
   a) proved to be incorrect by a significant result;
   b) the hypothesis you do not believe before an experiment;
   c) the simplest explanation for the data collected;
   d) shown to be highly unlikely by a significant result;
   e) none of the above.

5. Which of the following is the best synonym for validity?
   a) consistency;
   b) feasibility;
   c) truthfulness;
   d) economy.
6. Which of the following is the best synonym for reliability?
   a) consistency;
   b) usefulness;
   c) truthfulness;
   d) economy.

7. Presentation of the results of scientific research carried out for the purpose of:
   a) research activity reporting;
   b) acquisition of new information on the subject;
   c) results testing.

8. What is the sign that confirms the novelty of the scientific results?
   a) the absence of similar ideas from other scientists;
   b) the absence of the results in earlier publications by other authors.

9. The size of the report as a form of research results presentation in relation to the size of the article should be:
   a) significantly greater;
   b) the same;
   c) less.

10. Oral presentation under the subject is:
    a) a monograph;
    b) a scientific and technical rept;
    c) a report;
    d) a dissertation.

Theme 5. Research methods and models
Questions (compiled using [12 – 15]):
1. The term "range of talent" refers to:
   a) whether or not a set of scores is normally distributed;
   b) the fact that a data set shows a high degree of variability;
   c) the amount of variability in one or both variables in a correlation;
   d) the size of the standard deviation relative to the mean;
   e) none of the above.

2. If a data set has a large standard error, this implies that:
a) the mean of that data set is an unreliable estimate of the population mean;  
b) we cannot be sure that the data set are normally distributed;  
c) we need to collect more data;  
d) the data are probably not measurements on an interval or ratio scale;  
e) the data set probably show a high degree of skew.

3. An experimenter who makes a "type 1 error" believes:  
a) that the properties of their sample are valid;  
b) that there is a strong relationship between the variables in their study;  
c) that there is a genuine effect in a population, when in fact no such effect exists;  
d) that there is no effect in a population, when in fact there is;  
e) that their data satisfy the requirements for a parametric test, when in fact they do not.

4. If a questionnaire contains a question that is "closed ended", this means that:  
a) the data are likely to be less valid than if "open ended" questions are used;  
b) the resulting data are susceptible to the effects of experimenter bias;  
c) the respondent must provide a short answer to the question;  
d) the resulting data are necessarily categorical in nature;  
e) the answer to the question must be chosen from the limited number of alternatives supplied.

5. Mixed-method research refers to the use of both:  
a) experimental and correlational methods;  
b) the quantitative and qualitative methods;  
c) description and intervention;  
d) group and single subject designs.

6. The researcher used standardized instruments in qualitative research:  
a) true;  
b) false.
7. In non-experimental research, researchers make observations of existing situations and characteristics without intervening:
   a) true;
   b) false.

8. If a sample is unrepresentative, this implies:
   a) that not enough data were collected;
   b) that the data are not normally distributed;
   c) that one single measurement was not typical and therefore not useful;
   d) that this sample should not be used to make inferences about the population;
   e) none of the above.

9. Which of the following is the best way to control for the unwanted influence of maturation processes in an experiment?
   a) increase the sample size for the experiment;
   b) use a pretest as well as a posttest;
   c) use a control group;
   d) use subjects who have stabilized with regard to maturational level.

10. For the results of a parametric statistical test to be valid, the data should:
    a) not show homogeneity of variance;
    b) be measurements on a categorical scale;
    c) show homoscedasticity;
    d) be roughly normally distributed;
    e) be measurements on a rating scale.

Correct answers for the given tests are presented in Appendix A.
Questions for self-testing

Theme 1 (compiled using [18])
1. Explain the specificity of scientific thinking.
2. What are the fundamental differences between natural and social sciences?
3. Describe the phases of a mature science.
4. Consider the steps in developing a hypothesis in the research.
5. Describe the stages of scientific research.
6. Explain the difference between scientific and applied problems.
7. What is the value object and the subject of study?
8. Formulate requirements for the results of scientific research.

Theme 2 (compiled using [18])
1. Explain the necessity for defining keywords or concepts under the research.
2. Describe the types of concepts.
3. Formulate the rules for formulation of definitions.
4. Explain the role of plagiarism in the formulating the author’s definitions.
5. Explain the meaning of the morphological analysis in the concept definition process.
6. Title types of classification.
7. Provide the requirements for classification.
8. Formulate the difference between natural and synthetic classification.

Theme 3 (compiled using [18])
1. Consider the main stages of work on literary sources as part of scientific research.
2. Explain the procedure of familiarization with different types of literature on the study.
3. Formulate a definition of the “quick” way of reading.
4. Describe the key elements of the structuring of scientific articles.
5. Formulate the basic rules for writing scientific articles.
6. Provide the difference between scientific articles and theses.
7. Present and support your own point of view in response to writing scientific articles.
8. Discuss the key elements of the article's abstract.

**Theme 4 (compiled using [18])**
1. Compare the main sources of bibliographic data.
2. Examine critically the rules of a bibliography.
3. Describe the main types of records required when working with scientific literature.
4. Explain the fundamental difference between scientific review of summaries of several literature sources.
5. Give the meaning of research results presentation.
6. Consider a possible content for presentation of scientific research results.
7. Create the appropriate format for presenting your own scientific research report.

**Theme 5 (compiled using [18])**
1. Explain the difference between methods and methodology.
2. Describe the methods of research.
3. Explain the difference between the use of theoretical and experimental methods of scientific research.
4. Describe situations when it is possible to use a mixed-method approach.
5. Consider the essence of the economic-mathematical modelling.
6. Compare qualitative and quantitative methods of scientific research.
7. Discuss the points of modelling the business processes.
8. Formulate the steps for building a model for the research.
9. Discuss the problem of interaction between theory and experiment: two levels of scientific research.

**Individual scientific work of student**

**The purpose and tasks of a scientific research report**

Scientific research reports are a unique part of the undergraduate science course. Students are required to work independently over several months. For most students the research project is their first opportunity to experience the actual practices of modern scientific research [7].

Writing a student’s scientific research report is the final result studying
of the academic discipline “Basis of Scientific Research”, and the result of the independent educational and research activities, on the one hand, and comprehensive work, on the other hand.

The purpose of the student’s scientific research report is a practical application of theoretical knowledge of solving specific problems that are concerning the management of an enterprise.

The objectives of conducting a scientific research report are therefore:

- to provide the opportunity for students to undertake an independent piece of work of a demanding nature;
- to enable students to investigate, in depth, a subject in which they have a particular interest and of their own selection;
- to encourage the students to develop new forms of analysis, conclusions and policies which may make an original contribution to the knowledge in the field of study concerned;
- to encourage both clarity and depth of thought in that the project involves analysis of a problem in depth and the development of a logical sequence of ideas;
- to provide students with an opportunity of learning how to acquire detailed information on a particular issue;
- to require the proper use, presentation and communication of data [5].

The student’s scientific research report should have logical, demonstrative, argumentative characters and meet the following requirements [16]:

- contain in-depth comprehensive analysis of the investigated problem;
- contain elements of independent research;
- contain concrete proposals in the investigated problem;
- be executed in accordance with requirements;
- be completed and filed in the department within a period provided by the schedule of the educational process.

The topics of scientific research projects

The first step of the research process involves selecting a research topic. The topic of scientific research must be one of the urgent problems of modern management that meets the challenge.

The topics of scientific research projects are developed annually,
reviewed and refined by the Management and Business Department in accordance with syllabus of the studied academic discipline. Tentative topics for research are presented in Appendix B.

Students shall be entitled to choose the topic of the research according to the topics approved by the Management and Business Department or formulate their own topic after agreement with the Head of the Department.

Students in consultation with the supervisor offer their topic of research under appropriate rationale for its development (according to their own previous research work, opportunities to obtain the necessary information based on the research). The chosen topic is agreed and clarified with the supervisor, after which students develop a plan and timetable for the work, which must comply with the schedules approved by the department [16].

The choice of the topic usually comes from student’s interest in and value of a particular subject. This interest and value will eventually be developed into a series of questions which student is keen to find answers to. If you are finding difficulty in choosing a researchable topic, you can consider the following [5]:

1. Consult the library catalogue and inquire about theses and projects, articles in academic journals, reports, books and the like.
2. Use web searching to find area of interest.
3. Talk about problems and possible topics with your colleagues and/or with your lecturers who are experts in the field.

There are a number of criteria that need to be considered when deciding on scientific research topic. These are:

- a scientific research topic should be realistic;
- the topic should be specific and narrow;
- your topic should show individuality, i.e. your personal contribution to the study;
- accessibility of information;
- personal ability;
- personal interest [5].
Requirements for the structure and content of the scientific research report

General requirements

During the preparation of a scientific research report students must adhere to certain requirements [16]:

the report submitted by a student is performed in the language of student’s study (Ukrainian, Russian or English) and should be necessarily be computer printed;

the scientific research report must be performed by each student individually;

the scientific research report should help address specific managerial, economic, financial, social problems or a complex of these problems with orientation on the issues of management of an organization;

it is necessary for a scientific research report to disclose student’s skills in presenting the material briefly, logically and reasonably. The text should be free of grammatical and stylistic errors and its design should meet the requirements for papers submitted for publication;

students must necessarily make reference to the author and the source from which materials or individual results are used in the report. In the case of using material (text, tables, calculations, graphs, etc.) without reference to the author and source the report will be rejected without permission to be defended ever since.

A sample writing process consists of several stages [11]:

1. Prewriting:
make notes, scribble ideas: start generating the text, draw figures, sketch out presentation ideas;
ignore neatness, spelling, and sentence structure – get the ideas down.

2. Writing:
start with whatever section is easiest to write;
skip around to different sections as needed;
keep writing.

3. Revision:
work on the content first, then the structure, then the style;
keep focused on the main purpose: communicating, reasoning, presenting clearly;
circle back to prewriting as needed.
4. Editing:
   check all data for accuracy;
   review for grammatical, mechanical, and usage errors.
5. Proofreading:
   print and read your report again. Often we don't see errors on-line as easily as we do on a hard copy.

**Requirements for the structure of the scientific research report**

A scientific research report is done on the basis of the study of domestic and foreign literature in the speciality: books, periodicals, scientific publications, laws and regulations, special literature, and textbooks (as a secondary source, used as rare by as possible), etc., statistical data.

A scientific research report should contain the following sections (in order mentioned below):

1. The title page of the scientific research report. It should be performed on the unified form (Appendix C) with all signatures (student’s and scientific supervisor’s).
2. The contents of the report.
3. Introduction.
4. The main part which consists of the theoretical, analytical and project sections.
5. Conclusions.
6. A list of references.
7. Appendices.

The structure of a scientific research report and the size of its individual sections depend on the specific topic of research, but it should be formed in compliance with the following conditions:

- the size of the report is 35 — 40 typescript pages (excluding references and appendices);
- the most important and, consequently, the largest is the project part;
- auxiliary tables, technical documentation should be placed in appendices;
- the number of pages in the individual sections are not clearly regulated, but must meet the requirements of sufficient information content and validity of decisions and conclusions.

The scientific research report consists of sections and subsections. Conclusions are to be formulated at the end of each section.
The content of each section depends on the topic of scientific research and the report’s plan agreed with the scientific supervisor. However, there are general requirements for the size of each section that are listed below.

An approximate number of pages in the sections is as follows:
- introduction: 1 – 2 pages;
- the theoretical section: 10 – 15 pages;
- the analytical section: 7 – 10 pages;
- the project section: 7 – 10 pages;
- conclusions: 1 – 2 pages.

**Requirements for the content of sections of the scientific research report**

**Introduction**

The introduction is a brief section (no more than 1 – 2 pages usually) designed to inform the reader of the relevance of the research and includes a short history or relevant background that leads to a statement of the problem that is being addressed.

The purpose of the introduction is to supply sufficient background information to allow the reader to understand and evaluate the results of the present study. Introduction should be written in the present tense, because you will be referring primarily to your problem and the established knowledge relating to it at the start of your work [4].

Introductions usually follow a funnel style, starting broadly and then narrowing. The funnel from something known, to something unknown, to the question the paper is asking [11]:

- focuses on the overall issue, problem, or question that your research addresses. What is the context of your study (i.e. how does this relate to other research)?
- provides sufficient context and background for the reader to understand and evaluate research.
- develops the rationale for your work: poses questions or research problems and outlines your main research focus. What was your research question?

The main components of introduction are presented in the table 1.
The introduction contains relevance and practical significance of the chosen topic of research, defines the purpose and tasks, the object, subject of study, briefly describes the methods and sources of information for study, and obtained results that contain elements of novelty (the proposals).

Justification of relevance must be brief. A few sentences is enough to express the main idea.

The introduction contains a statement of report purpose and tasks that need to be addressed to achieve this purpose. It is important to specify the purpose to find out which aspects of the problem have already been developed by other researchers, and identify the sides which nobody has touched upon [17].

One rule: do not formulate the purpose as "research ..." or "... the study" because these words suggest means to achieve the purpose, but not the purpose itself [16].

To achieve the purpose, a relatively independent list of scientific tasks should be formulated, each task concerning a specific aspect of the scientific topic and goal.

Usually for task formulation the following worlds are used: "analyze ... ", "develop ... ", "summarize ... ", "prove ... ", "show ... ", "describe ... ", "identify ... ", "find ... ", "define the ... " etc. Tasks cannot be formulated as "learning", "acquaintance", "research", etc., so as not to indicate the result of a scientific development and individual processes [17].

The object of scientific research report is a process or phenomenon that creates a problematic situation and it is selected for research. Do not call the
object of the study a specific company, organization, institution or government body or department, which is taken as an example for the research, as it is the basis of the study [16].

The subject of scientific research report is the most important properties of an object, some of its aspects, segments or linkages that should be considered [17]. The subject of research determines the topic of the scientific research report.

Also introduction contains the list of research methods that are used in the report. Research methods should not be simply enumerated in isolation from the content, but it should be briefly defined what exactly is investigated by each of the method.

The introduction should also contain the results obtained in the report. The features that distinguish such results from the existing theory and practice must be pointed out [16].

The name of each section should reflect the nature of the issues disclosed. It is not allowed to use the name "theoretical part", "analytical part", "practical part".

**The theoretical section**

The theoretical section should contain 2 subsections.

The first subsection should disclose the general theoretical and methodological approaches to the problem using the literature review on the subject of study, necessarily using references to the sources cited. Literature review provides an extensive search of the literature to discover what is known about the subject to date. This also includes how the search of the literature was conducted. The size of the first subsection is up to 10 pages.

The literature review involves reading and appraising what other people have written about your subject area. It can be both descriptive and analytical. It is descriptive in that it describes the work of previous writers and it is analytical in that it critically analyses the contribution of others with the view of identifying similarities and contradictions made by previous writers [5].

This is a subsection where key terms are described. Also included are the research instruments and procedures used in conducting the study, or researching the topic. It is obligatory to conduct morphological analysis for basic terms of the research topic, give classification of the basic terms.

The first subsection contains critical appraisal of scientific information.
A critical appraisal is analytical in nature. It critically examines the contribution of other people’s work with a view to identifying the following [5]:

1) similarities in the statements made by previous writers;
2) common issue(s) raised by previous writers;
3) differences or contradiction of statements made by previous writers;
4) criticisms made by previous writers.

The second subsection is devoted to the analysis of the Ukrainian legislative regulation of the subject area of study. You have to consider the laws, regulations governing the activities of businesses and consumers in the area, which is directly related to the topic of the scientific research report. You should give a generalizing table or figure that describes the main normative documents in the investigated topic. Analysis can be performed in the context of individual regulations, indicating that question and as a matter governed by any code, law, regulation, etc., as possible – in terms of various aspects of the study areas, indicating how and what legislation they are governed by.

The size of the second subsection is up to 8 pages.

**The analytical section**

After considering the problem of the scientific research in the theoretical aspect, the student performs the analytical section. It should be entitled as "World experience of ... (subject area)". The size of the analytical section is up to 10 pages.

In this section you have to consider specific examples of practices of leading companies, as well as interstate, industry standards, analyze the trends prevailing. Pursuant to this subsection is the emphasis on and synthesis of advanced global achievements, best practices that can be implemented in the activities of domestic enterprises.

Also you can make the analysis of statistical data concerning to the world, European and Ukrainian trends in the subject area of the scientific research.

It is desirable to illustrate the text by graphic material: charts, graphs, algorithms, diagrams and histograms.

**The project section**

The objective of the third section is to develop specific recommendations and proposals, models of management of enterprise development and activity basing on the main theoretical assumptions,
methodological approaches and tools, considered in the theoretical section, as well as on the analysis made in the analytical section of the study. The section title is usually formulated as follows: "Ways of improvement of... (subject of study)". The size of the analytical section is up to 10 pages.

This section should contain detailed proposals for the improvement of the organization activity under the direction of a detailed study of reasoning and based on the findings of the analysis, which was conducted in the second section, based on the detected deviations, problems and shortcomings. Recommendations must be detailed, such as specific guidelines for solving problems detected [16].

Conclusions

Conclusions is the final stage of the scientific research report.

Conclusions briefly present the most important theoretical and practical points of the report, from the point of view of the scientific research purpose and tasks and proposals for improvement of activity of the enterprise [16].

The conclusions presented in the paper are those supported by the data. They also reflect the original purpose of the paper stated in the introduction [10].

The sequence of conclusions should match the set of objectives given in the introduction.

The list of references

The list of references is placed after the conclusions. It consists of the sources of literature that were used by the student when writing the scientific research report, namely legislative regulations, textbooks, monographs, articles in periodicals, websites, reference materials etc. Based on the experience of preparation of a scientific research report, the recommended total number of literature sources in the list of references must be at least 25. Sources published not more than 5 years before writing the thesis should prevail [16].

The list of references and appendices are not included in the total size of the report.

Appendices

The report can contain appendices. The appendices should contain supplementary material that is used for comprehensive perception of the scientific research:
long tables (more than 2 full pages);
tables containing supplementary numeric data (e.g. norms, filled and proceeded questionnaires etc.);
protocols, acts;
instructions and procedures, description of algorithms and computer programs, developed in the report;
supplementary illustration;
supplementary materials that have practical significance (tables, figures, regulations of the enterprise department).

The material provided in the applications must meet the chosen research topic and include the necessary materials that were the basis for the research [16].

Design requirements for the scientific research report

General requirements

Printing works by using a computer on the one side of a sheet of white A4 paper (210 x 297 mm) and a half line spacing, up to thirty lines per page (except for the title page for which the space multiplier 1.3 is set).

The margins must be sized: left ─ 25 mm, right ─ 15, upper ─ 20 mm, bottom ─ 20 mm.

The main text font is Normal, Times New Roman, size 14. It is not allowed to make bold or italicize certain words or parts of the text (except headers and titles of tables, figures) in bold, italics, etc.

Paragraph indentation should be 1.25 cm, the basic text should be aligned by the width. Orphan or widow lines are not allowed [16].

Numbers cannot be separated from the units – they should be placed in the same line.

You must follow a single style design of the report. Printing must be clear, black. The density of the text of the report should be the same.

Interrogative and exclamation marks in the report are unacceptable.

The titles of the structural parts of the report are content, introduction, sections, list of references, etc. printed in capital letters (type is 14 pt, bold).

After the title one blank line is left, and then the title of subsection (if any) is placed. Subsection titles are printed in small letters (except the first block), font size 14, bold. Between the text of the previous subsection and the title of the current subsection a blank line is left. There is no blank line directly
after the subsection title. There is no full stop at the end of any title [16].

Each section starts with a new page. Each new subsection starting on the same page, where the previous one was finished is separated by a blank line.

The last page of each section must be at least in 2/3 completed by the text.

**Numeration**

Sections, subsections, figures, tables, and formulas are designated with Arabic numbers without the number sign “No.”.

The first page of the report is the title page, which is included in the total number of the report pages. The title page is not numbered.

Page numbers are printed starting with the second page of the introduction to the end of the last page of appendices inclusively, in the upper right corner without a full stop. For page numbering font Times New Roman (size 12 pt) is used.

Before the section title its number in Arabic numerals is placed, followed by a full stop. The word "section" is not written.

Subsections are numbered within each section. The subsection number consists of the section number and the number of the subsection in this section with a full stop between these numbers. A full stop I put at the end of the subsection number [16].

**Lists**

Numbered or bulleted lists may be required in the report for reckoning certain objects, events or their properties. General rules for using these lists [16]:

1. In the case of quite long lists (consisting of several sentences) a numbered list is advisable. Each list item starts with a new line with a capital letter at the end position of a dot. Numbering is done with Arabic numerals, a dot after the number.

2. If logic requires the implementation of numbering list items with a small number of items a numbered list is used. Numbering is done with Arabic numerals or small letters of the Latin alphabet, a bracket after the number. Each list item starts with a new line of small letters at the end position of a semicolon. The last item ends in a full stop.
3. If necessary, a multilevel list is used (if some or the entire list contain "nested" lists) which should follow the same rules as for bulk item lists.

4. In all other cases, use a bulleted list. Each list item starts with a new line of small letters at the end position of a semicolon. At the end of the last item a full stop is put. Markers are either not used, or used as a marker line (dash). Do not use other types of markers (circle, flower, hand, etc.).

5. The style design of the lists (size, indentation, tab) must be the same throughout the work [16].

**Figures**

Figures (diagrams, charts, graphs) should immediately follow the text where they are mentioned for the first time, or on the next page. Figures larger than A4 size are considered as one page and placed on A3 sheets after mentioning in the text or in appendices.

If the reference information (photos, drawings, diagrams, charts, graphs, maps) is placed in the appendix, make sure it is referred to in the text.

Each figure in the main text of the report or appendix must be referenced in the text.

All artwork, regardless of whether they are graphs, charts, diagrams, etc., are indicated with the word "Fig." with the capital letter and numbered consecutively within a section, except for the figures presented in the appendices. Most figures should contain a chapter number and a serial number, a dot between them. The figure captions are consistently placed exclusively under the figure. The figure number and the caption are separated by a dot, e.g. "Fig. 1.2. Objectives of the personnel management" [16].

Figure example is presented below.

![Personnel Management Objectives Diagram]

**Fig. 1.2. Objectives of the personnel management**
Figures must be made by computer and be black and white. All color figures are allowed only in the appendices.

**Tables**

Tables are numbered consecutively within the section. Near the right sheet margin, leaving a blank line after the text, the word "table" with its number is placed. Most tables should consist of the section number and the serial number of the table, a dot between them. There is no dot after the table number, for example, "Table 3.2", means the second table of the third section.

The name of the table is given in the next line, symmetrically to the text. The word "Table" and the table name start with a capital letter. The word "Table" and its number and name should be given in the bold type. Under the table title do not miss a blank line, and place the table [16]. A sample table is given below.

**Table 3.2**

**Calculation of integrated grade of new equipment quality and effectiveness**

<table>
<thead>
<tr>
<th>Criterion</th>
<th>Avg weighted</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Producer</td>
<td>4</td>
<td>0.36</td>
</tr>
<tr>
<td>Functional capabilities of the equipment</td>
<td>4.24</td>
<td>0.37</td>
</tr>
<tr>
<td>Guarantee</td>
<td>2.79</td>
<td>0.1</td>
</tr>
<tr>
<td>After-sales service</td>
<td>1</td>
<td>0.06</td>
</tr>
<tr>
<td>Equipment cost</td>
<td>3.60</td>
<td>0.11</td>
</tr>
</tbody>
</table>

Each table must include a header with the names of the columns (sometimes – with the names of the lines). The table header font must be bold.

The tables are placed after the first mentioning them in the text or, failing that, on the next page. The table is placed so that it can be read without turning the unit of work or intertwined with turning clockwise.

All the tables of the report must be referenced in the text.

All the parts of the table transferred to another worksheet are not entitled, but the words "Continuation of table" and its number are provided at the right margin, for example: "Continuation of table 1.2". On the last page instead of "Continuation of table" write "End of table". The words "Continuation of table", "End of table" and the number of tables are given in
For tables Font 14, 12 or 10 pts Times New Roman may be used, line spacing must be single [16].

Tables sized 2 full sheets or more are transferred to the appendix.

Formulas

Formulas in the scientific report are performed using standard mathematical editors Microsoft Office (e.g., Microsoft Equation 3.0) and numbered (if more than one) within the section. Formulas are placed symmetrically to the text, immediately followed by a comma, or punctuation may be missing. Styles of all the formulas in the work must be the same.

Most formulas consist of the section number and the serial number of the formula in the section, a dot between them. The formula number is provided at the right sheet margin in parentheses. There is no dot between the formula and its number and after the formula number in parentheses.

Directly under the formula there must be an explanation of all the symbols and numerical values of the coefficients used in the formula (including the symbol that indicates the value for which the calculation formula is made), in the order in which they are listed in the formula [16].

A formula sample is given below.

\[ \text{AEE} = \text{I}_a - \text{C}_a, \]  \hspace{1cm} (3.5)

where AEE is the annual economic effect, ths UAH;

I\(_a\) is the additional marginal income during the year, ths UAH;

C\(_a\) is the additional costs during the year, ths UAH.

According to the example, it is the fifth formula of the third section.

References

When writing a scientific research report students must necessarily make references to the source material or some results which are presented in the report (theoretical sources, reference materials, etc.), as well as tables, equations, figures and appendices of the report.

If you use the information, materials from textbooks, monographs, review articles, and other sources of many pages, then the reference must
accurately specify the number of pages, figures, tables, formulas from the source, which is referenced in the report.

The source must be cited in the text with the serial number as indicated on the list of references and given in two brackets, e.g. "[4, p. 21 – 22]" (fourth number in the list of references, pages 21 – 22), or "... in [14, 21, 30] ..." [16].

A reference to a figure contains the serial number, for example: "Fig. 1.4" in lowercase letter.

A reference to a formula indicates the formula serial number in brackets, e.g.: "... in (2.3)."

When referring to a table in the text the word "table" is written in lowercase letter, for example: "... in table 1.4".

In repeated references to tables, illustrations and formulas the word "see" is written, for example, "see table 1.2" [16].

References can also be designed according to requirements of GOST 7.1:2006 (a sample design can be found at the Book Chamber of Ukraine at: http://www.ukrbook.net/prykl_bib_zap.pdf). It is important that the entire bibliography was issued under a single standard, or according to GOST 7.1:2006.

The list of references

Sources in the list of references are given in alphabetical order (using the author's first surname or headers in alphabetical order). The source Ukrainian and Russian are given first (Russian sources are not separated!) followed by foreign-language sources. Numbered the sources are sequentially.

When putting sources in the list of references make sure all the source data are included: the name of author(s), the title of the work, the location and the name of the publisher, the year of publication, the total number of pages (for periodicals, the page range of the article referred to is indicated). When making a list of references pay attention to the following general requirements:

the initials and the surname of the author are not detached from each other, that is they are always placed in the same line;

names and other details of the sources in Russian and other foreign languages are not translated;

the abbreviation of the word "page" ("p.") is always placed in the same line with the corresponding number;

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a journal (newspaper) number should not be provided as a separate item, instead a separate article can only be given as a list item;

URL-address of a Web site as the main text and in the list of references can not be invoked font with underline;

strictly adhere to the requirements of punctuation (based on the sample composition) without replacing a dash, making the necessary padding between the structural elements of the list of literature and punctuation [16].

Sample literature by their types are given in tab. 2 of guidelines.

### Table 2

**A sample bibliography design of different types [17]**

<table>
<thead>
<tr>
<th>Source type</th>
<th>Patterns</th>
</tr>
</thead>
</table>
2. Закон України «Про Державну програму економічного і соціального розвитку України на 2010 рік» від 20.05.2010 р. № 2278-17 // Відомості Верховної Ради України. – 2010. – № 33. – С. 470. |
<table>
<thead>
<tr>
<th>Papers in periodicals (newspapers, magazines)</th>
<th>Papers in the internet</th>
<th>Proceedings of conferences</th>
<th>Abstracts of dissertations</th>
<th>Dissertations</th>
</tr>
</thead>
</table>

### Appendices

Appendices are drawn as an extension of the report immediately after the list of references as a separate part, and placed in the order of appearance of references in the text of the report. Appendices should begin with a title page, with symmetrically printed word "Appendices". Each appendix must also begin with a title page with the word "Appendix" and the relevant letter placed symmetrically to the page, and given in bold. For example: "Appendix A". Its name should be given in small letters, in bold in the next line, for example: "The organizational structure of the enterprise management." The words "additional", "appendix", appendix number and the name in quotation marks are not provided.
Appendices should be identified consistently in capital letters of the English alphabet for example: "APPENDIX A", "APPENDIX B" and so on.

Figures, tables and formulas in applications are numbered within each application, eg "Fig. E.2" is a second figure in Appendix E, (A.1) is the first formula in Appendix A. The figures, tables and formulas in applications should be designed according the general requirements for report [16].
Appendix A

Answers for the tests

Table A.1

Correct answers for the tests according to the themes

<table>
<thead>
<tr>
<th>Questions</th>
<th>Theme 1</th>
<th>Theme 2</th>
<th>Theme 3</th>
<th>Theme 4</th>
<th>Theme 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>a, b, c</td>
<td>c</td>
<td>c</td>
<td>c</td>
<td>c</td>
</tr>
<tr>
<td>2</td>
<td>a</td>
<td>c</td>
<td>a</td>
<td>a</td>
<td>a</td>
</tr>
<tr>
<td>3</td>
<td>a</td>
<td>a</td>
<td>d</td>
<td>a</td>
<td>c</td>
</tr>
<tr>
<td>4</td>
<td>c</td>
<td>e</td>
<td>a</td>
<td>d</td>
<td>e</td>
</tr>
<tr>
<td>5</td>
<td>e</td>
<td>b</td>
<td>c</td>
<td>b</td>
<td>b</td>
</tr>
<tr>
<td>6</td>
<td>b, c</td>
<td>b</td>
<td>b</td>
<td>a</td>
<td>b</td>
</tr>
<tr>
<td>7</td>
<td>a, b</td>
<td>c</td>
<td>b</td>
<td>c</td>
<td>a</td>
</tr>
<tr>
<td>8</td>
<td>b</td>
<td>b</td>
<td>a</td>
<td>b</td>
<td>d</td>
</tr>
<tr>
<td>9</td>
<td>b</td>
<td>b</td>
<td>c</td>
<td>c</td>
<td>c</td>
</tr>
<tr>
<td>10</td>
<td>c</td>
<td>b</td>
<td>c</td>
<td>c</td>
<td>d</td>
</tr>
</tbody>
</table>
1. Improving decision-making at an enterprise.
2. Informational support of the decision-making process at an enterprise.
3. Improving the workflow management at an enterprise.
4. Developing a strategic plan for the enterprise.
5. Planning for industrial and business enterprises.
6. Development of the current planning at an enterprise.
7. Development of the operational planning at the enterprise.
8. Developing an operational plan of a company (unit).
10. Improving operational scheduling at the enterprise.
11. Organization and planning of technical training.
12. Planning new products for a selected period.
13. Improving the organizational structure of an enterprise.
14. Justification of the project implementation quality control of products at an enterprise.
15. Development of auxiliary production.
16. Developing a business plan of an investment project.
17. Developing a plan for investment companies.
18. Evaluation of investment attractiveness of a company.
19. Feasibility study of innovation at an enterprise.
20. Feasibility appropriate introduction of new products.
21. Justification of the project implementation of new products (services) at an enterprise.
22. The organization of work processes at an enterprise (unit).
23. Justification of labor organization system of an enterprise.
24. Project justification of the labor processes organization at an enterprise (unit).
25. Justification of the project of organization of the employee working place.
26. Justification of the labor incentive system of enterprise personnel.
27. Assessment and development of enterprise staff.
28. Improvement of personnel remuneration at an enterprise.
29. Justification of measures for improving productivity at an enterprise.
30. Justification of a product quality control management project at an enterprise.
31. Justification of e-marketing implementation project at an enterprise.
32. Organization of enterprise international business activity.
33. Project justification of the efficient use of the enterprise assets.
34. Organization of marketing activity of an enterprise.
35. Organization of sales activity of an enterprise.
36. Organization of logistics at an enterprise.
37. Justification of Corporate Social Responsibility implementation at an enterprise.
38. Planning of marketing activity at the enterprise.
39. Improvement of managerial decision-making in the sphere of production.
40. Justification of personnel crisis management system at an enterprise.
41. Production cost planning at an enterprise.
Appendix C

Example of a title page of scientific research report

MINISTRY OF EDUCATION AND SCIENCE OF UKRAINE

Kharkiv National Economic University named after Semen Kuznetsov

Faculty of Management and Marketing

Department of Management and Business

SCIENTIFIC RESEARCH WORK

"DEVELOPMENT OF INVESTMENT PROJECT BUSINESS PLAN"

Supervisor of the work

k.e.n., assistant

O. M. Krasyonosova

Execon

Student of 3 course, group 6.03.44.14.01

O. S. Petrenko

Kharkiv, 2016

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Recommended reading


Information Resources

13. Website Academia – Access mode : http://www.academia.edu/9216559/Name_e_z_a_EDPSY_505_Exam_1a.
15. Website of Benha University. Faculty of Nursing. Nursing administration department. – Access mode : www.bu.edu.eg.

Methodical Support


Guidelines to the independent training on the academic discipline
"BASIS OF SCIENTIFIC RESEARCH"
for students of training directions 6.030601
"Management", 6.140103 "Tourism"
of all forms of study

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