MINISTRY OF EDUCATION OF THE REPUBLIC OF BELARUS
Educational institution
"Vitebsk State University of Technology"

PROJECT MANAGEMENT

Workbook
for students of specialty
6-05-0311-02 "Economics and management"

Vitebsk
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UDC 65(075.8)

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The workbook is designed for practical classes in the "Project management" for students majoring in 6-05-0311-02 "Economics and Management". It contains questions, tasks, situations, tables, and figures for completing practical assignments on the topics of the course. It's intended to reinforce students' theoretical knowledge and develop practical skills in planning, organizing, and monitoring project activities; managing the project lifecycle; creating project reporting, and providing information support for project development and implementation.

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CONTENT

INTRODUCTION

The course "Project Management" belongs to the module "Special Management Functions" of the component of the higher education institution (elective disciplines) for students of specialty 6-05-0311-02 "Economics and Management".

The purpose of the course "Project Management" is to study the project form of management organization, the features of management at different stages of the project lifecycle, and to develop students' competencies in planning and managing project implementation.

Course objectives:

− acquire knowledge in project planning, organization, implementation, and completion;

− develop skills in project team selection and motivation, project quality and risk management, and project information support;

− study key project metrics and project management methods;

− methods for effectively addressing project management issues.

As a result of studying the course, the student should consolidate and develop the following specialized competence:

SC "Be able to develop a corporate strategy, organizational development programs; manage organizations, employee teams, projects and networks".

The total number of hours allocated to study the academic discipline is 128.

Form of higher education – full-time in English. 1 course, 2 semester

Distribution by semester	Credit units	Total audit. hours	incl. by type of occupation				Interim certification form
			Lectures	Labor. classes	Pract. classes	Seminar classes	
1 semester	4	75	30	–	45	–	Exam

TOPIC 1. THE ESSENCE AND PURPOSE OF PROJECT MANAGEMENT

Task 1.1. Provide several definitions of the concept of "project" from the point of view of various authors (Table 1). Compare the given interpretations and formulate a general definition based on them.

Table 1 – Approaches to defining the concept of "project"

No.	Author (source)	Definition
1		
2		
3		
4		
5		

The project is _____

_____

_____

_____

_____

_____

Task 1.2. List and describe the most significant project features in Table 2.

Table 2 – Systematization of project features

No.	Feature	Description
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		

Should every project have all of the above features?

_____

_____

_____

_____

Task 1.3. List and briefly describe the main types of projects in Table 3.

Table 3 – The main types of projects

Type of project	Characteristic
1.	
2.	
3.	
4.	
5.	
6.	
7.	
8.	
9.	

TOPIC 2. PROJECT AREAS AND LIFECYCLE

Task 2.1. List and briefly describe the main participants of the projects and their role in it (Table 4).

Table 4 – Participants of the projects

Participant	Role in the project
1.	
2.	
3.	
4.	
5.	
6.	
7.	
8.	

Task 2.2. List and briefly describe the main phases of the project life cycle and their role (Table 5).

Table 5 – Phases of the project lifecycle

Phase	Characteristic	Contents of works
1. Initiation of the project		
2. Development of the project concept		
3. Project planning		
4. Project implementation		
5. Project evaluation and completion		

TOPIC 3. LOGICAL FRAMERWORK APPROACH TO PROJECT MANAGEMENT

Task 3.1. The study group is divided into subgroups. Each subgroup must put forward a project initiative (project idea) and formulate a project concept.

1. Project name.

2. Project idea.

3. Project logo.

4. Project goal.

5. Project target group.

6. The target group needs for which the project is being undertaken.

7. Brief description of the project product.

8. Project limitations.

9. Critical success factors.

Task 3.2. Each subgroup must design the project with the Logical framework approach.

1. Project name.

2. Project wider context (learn more about the wider context of the project topic, find some appropriate statistical data. Please, use reports, books, documents, websites, etc.)

3. Identify stakeholders (Who are the people, groups, organizations, government bodies, companies… that are somehow involved or touched by this project?)

4. Problem tree analysis.

5. The objectives tree (turn your problem tree into something constructive: the objectives tree. Start at the top row of your problem tree, and rephrase every problem in a positive statement or a solution).

6. Project strategy (define the way to achieve project goal).

Task 3.3. Each subgroup must fill the Logical framework matrix on the project (Table 6).

Table 6 – Logical framework matrix

	Project description	Indicators	Sources for verification	Assumptions
Goal				
Objectives (purposes)				
Outputs				
Activities				

TOPIC 4. PROJECT PLANNING

Task 4.1. List the main project planning tools and give a brief description of them in Table 7.

Table 7 – Project planning tools

Tool	Characteristic
1.	
2.	
3.	
4.	
5.	
6.	
7.	
8.	
9.	
10.	

Task 4.2. Develop a goals tree for your project.

Project name.

Project goals tree.

Task 4.3. Each subgroup must design the project work breakdown structure (Table 8).

Table 8 – Project WBS (Work breakdown structure)

Work code	Work name	Duration (days)	Previous work	Result

Task 4.4. Design a project network diagram based on the data presented in Table 9. An example is shown in Figure 1.

Table 9 – Initial data for the example 1

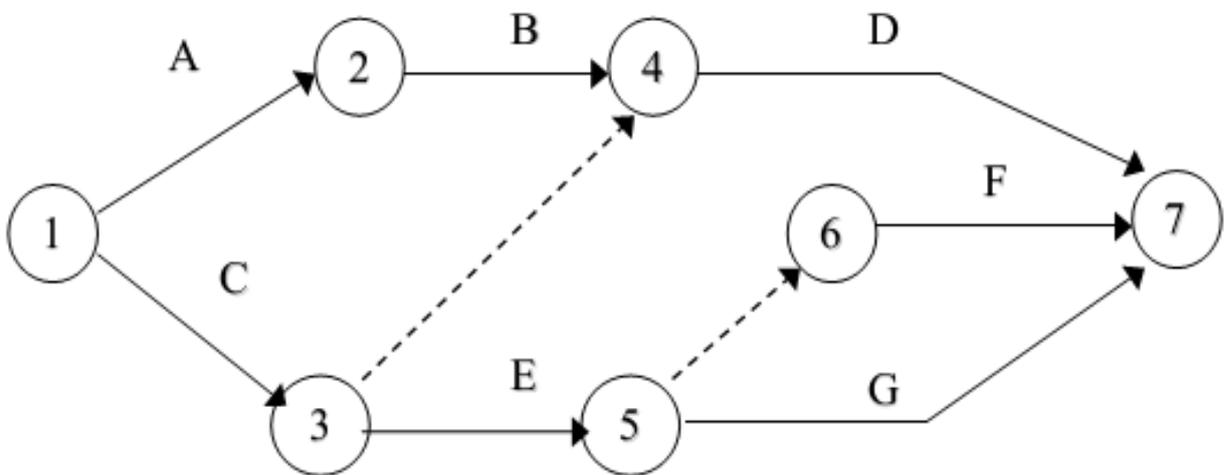| Work	Previous work	Duration, weeks
A	–	4
B	–	6
C	A, B	7
D	B	3
E	C	4
F	D	5
G	E, F	3

Figure 1 – The example of project network diagram

Project network diagram *(based on data in Table 9)*

Task 4.5. Design a project network diagram based on the data in Table 10.

Table 10 – Initial data for the example 2

Work	Previous work	Duration, weeks
A	–	4
B	–	6
C	–	5
D	B	2
E	A	9
F	B	4
G	C, D	8
H	B, E	3
I	F, G	5
J	H	7

Project network diagram *(based on data in Table 10)*

Task 4.6. Based on the examples (tasks 4.4, 4.5), create a network diagram for your project.

Network diagram of the project "_____"

Task 4.7. Calculate the critical path of the project based on the data in Table 9.

Calculation of the critical path *(based on data in Table 9)*

Task 4.8. Calculate the critical path of the project based on the data in Table 10.

Calculation of the critical path *(based on data in Table 10)*

Task 4.9. Based on your project network diagram (task 4.6) calculate the critical path of your project.

Calculation of the critical path of a project "_____"

Task 4.10. Develop the Gant chart for your project (Table 11).

Table 11 – Gant chart of the project "_____"

Work code	Work name	Duration (days)	Work start date	Work end date

TOPIC 5. ORGANIZATION OF PROJECT MANAGEMENT

Task 5.1. Define the following concepts clearly and concisely.

Project manager – _____

_____

_____

_____

_____

Project team – _____

_____

_____

_____

_____

Task 5.2. Develop the organizational structure for your project.

Organizational structure of the project "_____"

Task 5.3. Develop the responsibility matrix for your project (Table 12).

Table 12 – Responsibility matrix of the project

Work code	Work name	Responsible team member	Other participants

TOPIC 6. PROJECT BUSINESS PLAN

Task 6.1. List and briefly describe the main chapters of the project business plan in Table 13.

Table 13 – Structure and content of the project business plan

No.	Chapter	Content
1		
2		
3		
4		
5		
6		
7		
8		
9		

Task 6.2. Develop the budget for your project.

Direct costs: wages, costs of necessary materials and equipment, travel expenses and payment for subcontracted work; indirect costs: overhead costs (bonuses, office rent, rent and purchase of office furniture, use of the organization's equipment - as a rule, they are difficult to highlight in the estimate) and administrative costs (maintenance of the administrative apparatus and support of the organization's performance (HR department, accounting, economic department, etc.). An example of possible forms of presentation of the project budget is presented in the Table 14.

Table 14 – Budget of the project "_____"

No.	Cost item	Quantity	Price	Total cost	Source of funding	
					own funds	investor
Total						

Task 6.3. Develop the Quality management plan for your project.

1. Describe product requirements for the project outcomes and outputs.

2. Describe sources of information to verify the quality in your project

3. Describe quality assessment and confirmation procedures

Task 6.4. Develop the Risk management plan for your project.

1. Define possible risks for the project.

2. Evaluate the severity of each risk and its likelihood.

3. Describe risk management activities for the project.

Task 6.5. Develop Communications management plan for your project. Define project participants and communications tools for them.

TOPIC 7. RESOURCE SUPPORT FOR THE PROJECT

Task 7.1. Give short answers to the questions below.

1. What factors should be taken into account when deciding on the selection of suppliers and concluding contracts?

1._____

2._____

3._____

4._____

5._____

6._____

2. What contracts for determining the price of project works do you know?

1._____

2._____

3._____

4._____

5._____

6._____

3. What are the main sections that a supply contract should include?

1._____

2._____

3._____

4._____

5._____

6._____

4. Define the suppliers in your project.

TOPIC 8. IMPLEMENTATION MANAGEMENT AND PROJECT CONTROL

Task 8.1. List and briefly describe the main stages included in the project implementation phase (Table 15).

Table 15 – Project implementation stages

Stage	Characteristic
1.	
2.	
3.	

Task 8.2. Provide a comparative analysis of the main project implementation monitoring (control) tools in Table 16.

Table 16 – Comparative analysis of monitoring tools

Tool	Characteristic	Advantages	Disadvantages
1.			
2.			
3.			
4.			

Task 8.3. Prepare an interim report on the progress of your project. An interim report on the implementation of a project is prepared after completing about half of the project work and is presented for defense in the middle of the project.

The interim report should reflect the following information.

1. The name of the project, its objectives.

2. The project manager, the project team, the stakeholders.

3. The date on which the report was prepared.

4. The stages completed, the project work and the results obtained. Confirmation of the quality of the work performed.

5. The actual costs of the project as of the date of the interim report (financial, labor, etc.)

6. The actual deadlines for the implementation of the completed stages, their compliance with the planned schedule.

7. Calculation of the cost of the project using the earned value methodology.

8. Changes that arise in the project during its implementation.

9. Difficulties that arise in the project, as well as measures to overcome them.

10. Possibilities of successful completion of the project.

The report must be generated as a separate document in printed form (one report per subgroup). Make a presentation on the interim report of the project providing the evidences (documents, contracts, bills, photos, video. etc.).

Task 8.4. Prepare the request for changes in the project if needed and justify their necessity.

TOPIC 9. PROJECT QUALITY MANAGEMENT

Task 9.1. List the main criteria that may indicate that a project is of high quality.

Task 9.2. Compare the main project quality control tools in Table 17.

Table 17 – Project quality control tools

Tool	Characteristic	Advantages	Disadvantages
1.			
2.			
3.			
4.			

Task 9.3. Based on the comparative analysis (table 17), select the method that would be most appropriate for assessing the quality of your project. Justify your choice.

TOPIC 10. COMPLETION OF THE PROJECT

Task 10.1. List the signs that may indicate a positive outcome of the project.

1._____

2._____

3._____

4._____

5._____

Task 10.2. List the signs that may indicate a negative outcome of the project.

1._____

2._____

3._____

4._____

5._____

Task 10.3. Research a project successfully completed in the past 5-7 years. Examine its objectives and outcomes. How are these results being applied today?

Task 10.4. Prepare the request for changes in the project if needed and justify their necessity.

Look into a project launched but not successfully completed in the last 5-7 years. Review its goals and outcomes. Identify why it failed, what mistakes the project manager made during implementation, and what corrective actions could have

been taken to ensure its success.

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Task 10.5. Prepare the final report of your project. The final report on the project implementation is prepared based on the results of the project work and is submitted for defense upon completion of the project.

The final report should reflect the following information:

1. The name of the project, its objectives.

2. The project manager, the project team, all the stakeholders (participants) of the project.

3. Completion of the stages, work on the project and the results obtained.

Confirmation of the quality of the work performed.

4. Project costs (financial, labor, etc.) and its evidences.

5. Project implementation timeframes and their compliance with the planned schedule.

6. Feedback from clients and the project customer.

7. Achieving project goals.

8. Possibilities of implementing the results of the project work.

9. Project development prospects.

10. Photo and video materials about the project.

The report must be generated as a separate document in printed form (one report per subgroup). Please, make a presentation on the final report.

TOPIC 11. INFORMATION SUPPORT FOR PROJECT MANAGEMENT

Task 11.1. What are the main requirements for the project communication system?

1._____

2._____

3._____

4._____

5._____

Task 11.2. Describe the communication methods and means (for example, social media) which were used in your project.
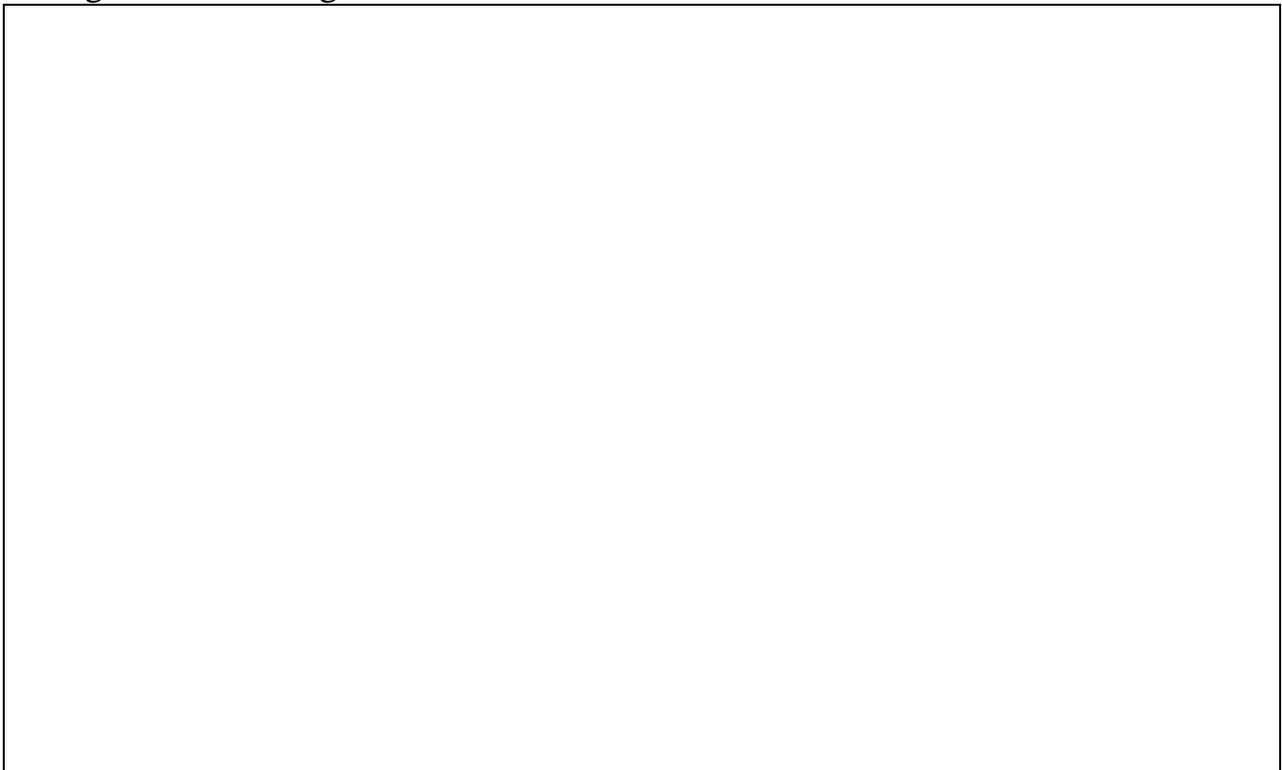

Task 11.3. List the software products for project management you know.

TOPIC 12. INTRODUCTION OF PROJECT MANAGEMENT INTO THE ACTIVITIES OF THE ORGANIZATION

Task 12.1. List the main stages of implementing project management in an organization's activities:
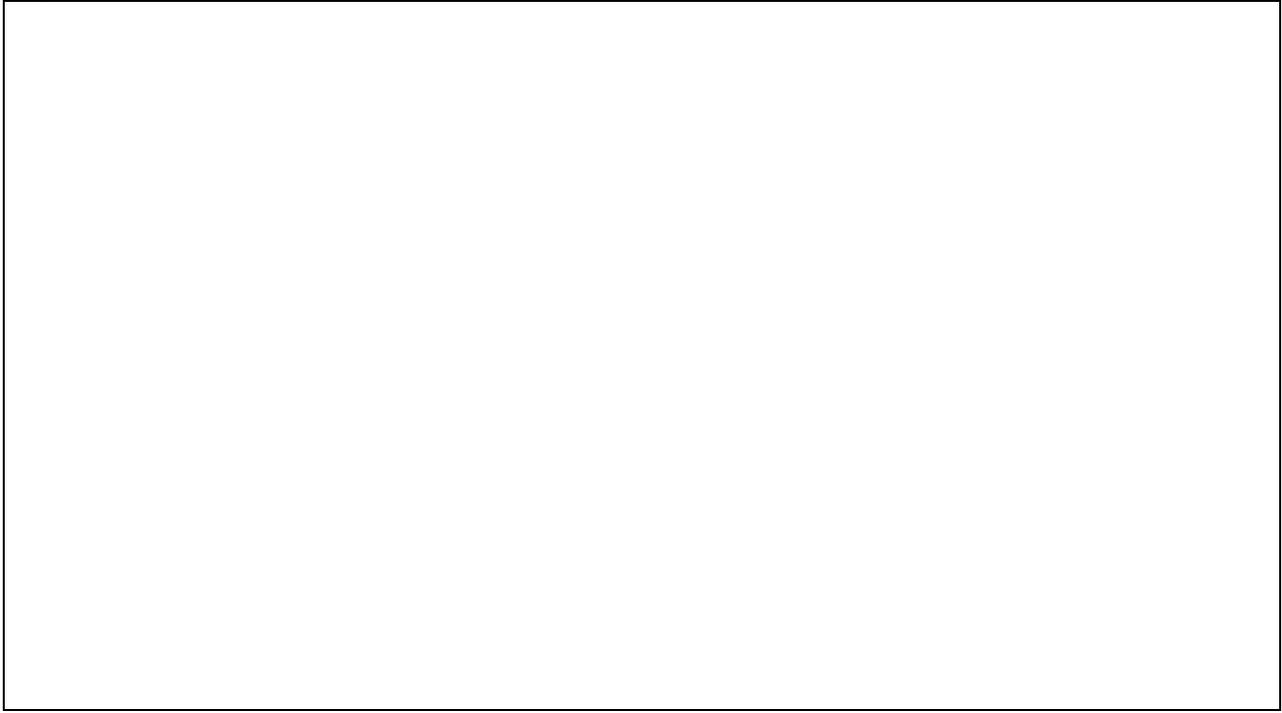
Task 12.2. What problems can be caused by implementing project management in an organization's activities?

Task 12.3. List the international standards that regulate the areas of project management:

Task 12.4. Compare the approaches used in PMBoK 6, PMBoK 7 and PMBoK 8. What is the scope of application of these standards? Which standard is more suitable for your project and why?
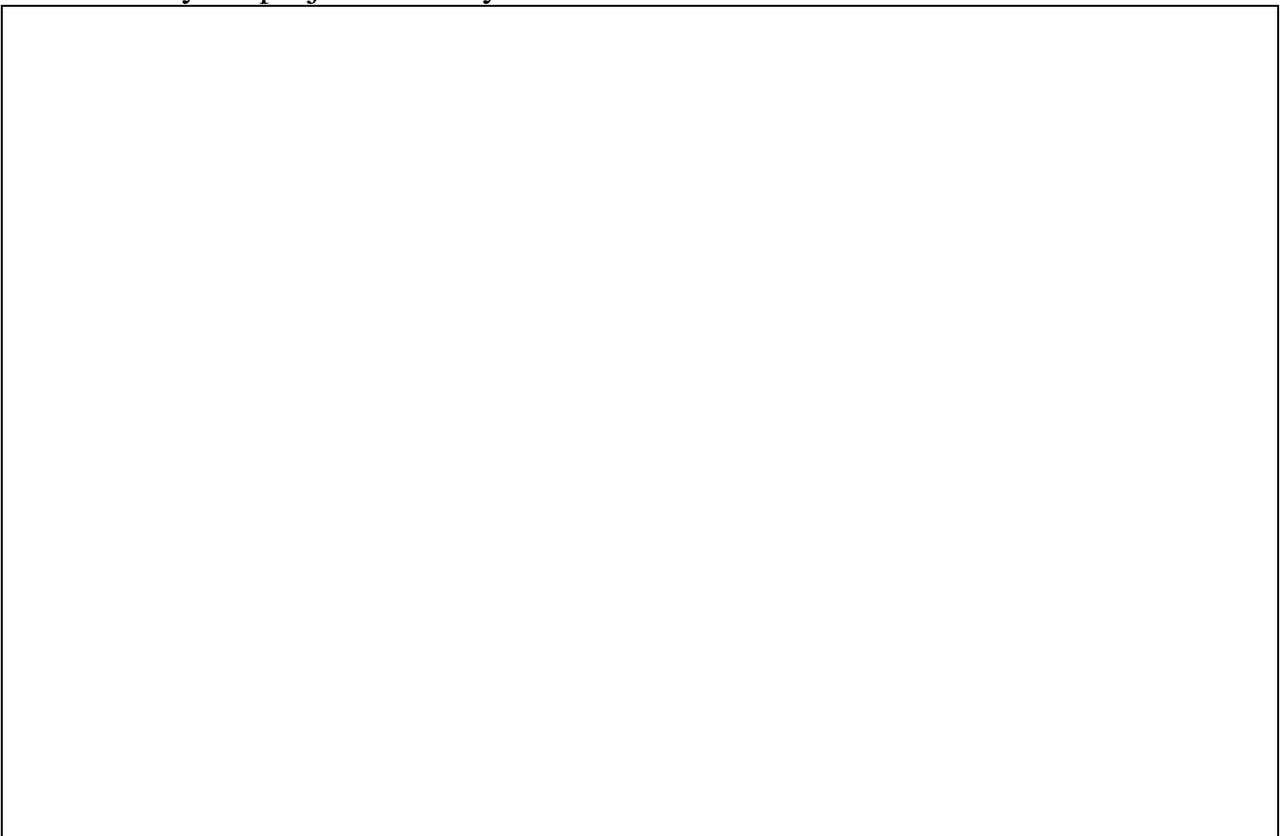
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