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KIM HELDMAN, PMP

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Project Management Professional Exam

Study Guide
2021 Exam Update
Tenth Edition



Kim Heldman, PMP

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To BB, my forever love.

Acknowledgments

Thank you for buying *PMP®: Project Management Professional Exam Study Guide, Tenth Edition*, to help you study and prepare for the PMP® exam. Thousands of readers worldwide have used previous editions of this book to help them study for and pass the exam. Because of their success and recommendations to friends and co-workers, we've been able to keep this study guide up to date to reflect the changes made in *A Guide to the Project Management Body of Knowledge (PMBOK® Guide), Sixth Edition* (PMI®, 2017).

I would also like to thank the countless instructors who use my book in their PMP® prep classes. Thank you for your continued interest in using it in your classes. A big thanks goes to all the PMI® chapters who use this book in their classes as well.

A huge thank-you goes to Neil Edde, former vice president and publisher at Sybex, for taking a chance way back when on the first edition of this book. I can't thank him enough for having the foresight at that time to believe in this little-known exam. Almost 20 years later, the exam is well known and instructors and readers all over the globe have used this Study Guide to help them pass the PMP® exam.

Publishing this book clearly fits the definition of a project, and the team at Sybex is one of the best project teams you'll ever find. I appreciate all the hard work and dedication everyone on the team put into producing this book. A special thanks goes to Kenyon Brown, the acquisitions editor, for giving me the opportunity to update the book and for his ideas on making it stronger.

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About the Author

Kim Heldman, MBA, PMP®, is the Senior Manager/CIO for the Regional Transportation District in Denver, Colorado. Kim directs IT resource planning, budgeting, project prioritization, and strategic and tactical planning. She directs and oversees IT design and development, enterprise resource planning systems, IT infrastructure, application development, cybersecurity, the IT program management office, intelligent transportation systems, and datacenter operations.

Kim oversees the IT portfolio of projects ranging from those that are small in scope and budget to multimillion-dollar, multiyear projects. She has over 25 years of experience in information technology project management. Kim has served in a senior leadership role for over 20 years and is regarded as a strategic visionary with an innate ability to collaborate with diverse groups and organizations, instill vision, improve morale, and lead her teams in achieving goals they never thought possible.

Kim wrote the first edition of *PMP®: Project Management Professional Study Guide*, published by Sybex, in 2002. Since then, thousands of people worldwide have used the study guide in preparation for the PMP® exam. Kim is also the author of *CompTIA Project+ Study Guide: Exam PK0-004, Second Edition*, *Project Management JumpStart, Third Edition*, and *Project Manager's Spotlight on Risk Management*. Kim has also published several articles and is currently working on a leadership book.

Most of the Real-World Scenarios in this study guide are based on Kim's real-life experiences. The names and circumstances have been changed to protect the innocent.

Kim continues to write on project management best practices and leadership topics, and she speaks frequently at conferences and events. You can contact Kim at Kim.Heldman@gmail.com. She loves hearing from her readers and personally answers all her email.

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Introduction

This book was designed for anyone thinking of taking the Project Management Professional (PMP®) exam sponsored by the Project Management Institute (PMI®). This certification is in high demand in all areas of business. PMI® has experienced explosive growth in membership over the last few years, and more and more organizations are recognizing the importance of project management certification.



Although this book is written primarily for those of you taking the PMP® exam, you can also use this book to study for the Certified Associate in Project Management (CAPM®) exam. The exams are similar in style, and the information covered in this book will help you with either exam.

This book has been updated to reflect the latest edition of *A Guide to the Project Management Body of Knowledge (PMBOK® Guide), Sixth Edition* (PMI®, 2017), and the new exam domains introduced in 2020. It assumes you have knowledge of general project management practices, although not necessarily specific to the *PMBOK® Guide*. It's written so that you can skim through areas you are already familiar with, picking up the specific *PMBOK® Guide* terminology where needed to pass the exam. You'll find that the project management processes and techniques discussed in this book are defined in such a way that you'll recognize tasks you've always done and be able to identify them with the *PMBOK® Guide* process names or methodologies.

PMI® offers the most recognized certification in the field of project management, and this book deals exclusively with its procedures and methods. Project management consists of many methods, each with its own terminology, tools, and procedures. If you're familiar with another organized project management methodology, don't assume you already know the *PMBOK® Guide* processes. I strongly recommend that you learn all of the processes—their key inputs, tools and techniques, and outputs. Take the time to memorize the key terms found in the Glossary as well. Sometimes just understanding the definition of a term will help you answer a question. It might be that you've always done that particular task or used the methodology described but called it by another name. Know the name of each process and its primary purpose.



The process names, inputs, tools and techniques, outputs, and descriptions of the project management process groups and related materials and figures in this book are based on content from *A Guide to the Project Management Body of Knowledge (PMBOK® Guide), Sixth Edition* (PMI®, 2017). The references to adaptive and hybrid methodologies, related materials, and figures in this chapter are based on content from the *Agile Practice Guide* (PMI®, 2017).

What Is the PMP® Certification?

PMI® is the leader and the most widely recognized organization in terms of promoting project management best practices. PMI® strives to maintain and endorse standards and ethics in this field and offers publications, training, seminars, chapters, special interest groups, and colleges to further the project management discipline.

PMI® was founded in 1969 and first started offering the PMP® certification exam in 1984. PMI® is accredited as an American National Standards Institute (ANSI) standards developer and also has the distinction of being the first organization to have its certification program attain International Organization for Standardization (ISO) 9001 recognition.

PMI® boasts a worldwide membership of more than a half a million members with more than 200 countries and territories around the globe. Local PMI® chapters meet regularly and allow project managers to exchange information and learn about new tools and techniques of project management or new ways to use established techniques. I encourage you to join a local chapter and get to know other professionals in your field.

Why Become PMP® Certified?

The following benefits are associated with becoming PMP® certified:

- It demonstrates proof of professional achievement.
- It increases your marketability.
- It provides greater opportunity for advancement in your field.
- It raises customer confidence in you and in your company's services.

Demonstrates Proof of Professional Achievement

PMP® certification is a rigorous process that documents your achievements in the field of project management. The exam tests your knowledge of the disciplined approaches, methodologies, and project management practices as described in the *PMBOK® Guide*.

You are required to have several years of experience in project management before sitting for the exam, as well as 35 hours of formal project management education. Your certification assures employers and customers that you are well grounded in project management practices and disciplines. It shows that you have the hands-on experience and a mastery of the processes and disciplines to manage projects effectively and motivate teams to produce successful results.

Increases Your Marketability

Many industries are realizing the importance of project management and its role in the organization. They are also seeing that simply proclaiming a head technician to be a “project manager” does not make it so. Project management, just like engineering,

information technology, and a host of other trades, has its own specific qualifications and skills. Certification tells potential employers that you have the skills, experience, and knowledge to drive successful projects and ultimately improve the company's bottom line.

A certification will always make you stand out above the competition. If you're a PMP® credential holder and you're competing against a project manager without certification, chances are you'll come out as the top pick. As a hiring manager, all other things being equal, I will usually opt for the candidate who has certification over the candidate who doesn't have it. Certification tells potential employers you have gone the extra mile. You've spent time studying techniques and methods as well as employing them in practice. It shows dedication to your own professional growth and enhancement and to adhering to and advancing professional standards.

Provides Opportunity for Advancement

PMP® certification displays your willingness to pursue growth in your professional career and shows that you're not afraid of a little hard work to get what you want. Potential employers will interpret your pursuit of this certification as a high-energy, success-driven, can-do attitude on your part. They'll see that you're likely to display these same characteristics on the job, which will help make the company successful. Your certification displays a success-oriented, motivated attitude that will open up opportunities for future career advancements in your current field as well as in new areas you might want to explore.

Raises Customer Confidence

Just as the PMP® certification assures employers that you've got the background and experience to handle project management, it assures customers that they have a competent, experienced project manager at the helm. Certification will help your organization sell customers on your ability to manage their projects. Customers, like potential employers, want the reassurance that those working for them have the knowledge and skills necessary to carry out the duties of the position and that professionalism and personal integrity are of utmost importance. Individuals who hold these ideals will translate their ethics and professionalism to their work. This enhances the trust customers will have in you, which in turn will give you the ability to influence them on important project issues.

How to Become PMP® Certified

You need to fulfill several requirements in order to sit for the PMP® exam. PMI® has detailed the certification process quite extensively at its website. Go to www.pmi.org and click the Certifications tab to get the latest information on certification procedures and requirements.

As of this writing, you are required to fill out an application to sit for the PMP® exam. You can submit this application online at the PMI® website. You also need to document 35 hours of formal project management education. This might include college classes, seminars, workshops, and training sessions. Be prepared to list the class titles, location, date, and content.

In addition to filling out the application and documenting your formal project management training, there is one set of criteria you'll need to meet to sit for the exam. The criteria in this set fall into two categories. You need to meet the requirements for only one of these categories:

- Category 1 is for those who have a baccalaureate degree. You'll need to provide proof, via transcripts, of your degree with your application. In addition, you'll need to complete verification forms—found at the PMI® website—that show 4,500 hours of project management experience that spans a minimum of three years. You'll also need 35 hours of project management education/training.
- Category 2 is for those who do not have a baccalaureate degree but do hold a high school diploma or associate's degree. You'll need to complete verification forms documenting 7,500 hours of project management experience that spans a minimum of five years. You'll also need 35 hours of project management education/training.

As of this writing, the exam fee is \$405 for PMI® members in good standing and \$555 for non-PMI® members. Testing is conducted at Prometric testing centers. You can find a center near you on the Prometric center website, but you will not be able to schedule your exam until your application is approved by PMI®. You have one year from the time PMI® receives and approves your completed application to take the exam. You'll need to bring two forms of identification, such as a driver's license and a credit card in your name, with you to the Prometric testing center on the test day. You will not be allowed to take anything with you into the testing room and will be provided with a locker to store your personal belongings. You will be given a calculator, pencils, and scrap paper. You will turn in all scrap paper, including the notes and squiggles you've jotted during the test, to the center upon completion of the exam.

The exam is scored immediately, so you will know whether you've passed at the conclusion of the test. You're given four hours to complete the exam, which consists of 200 randomly generated questions. Only 175 of the 200 questions are scored. Twenty-five of the 200 questions are “pretest” questions that will appear randomly throughout the exam. These 25 questions are used by PMI® to determine statistical information and to determine whether they can or should be used on future exams. You will receive a score of Proficient, Moderately Proficient, or Below Proficient for each exam domain, as well as a Pass or Fail score. Because PMI® uses psychometric analysis to determine whether you have passed the exam, a passing score is not published. The questions on the exam cover three domains with roughly half the questions involving agile or hybrid methodologies. There will also be questions regarding professional responsibility. You'll answer questions on the following domains:

- People
- Process
- Business Environment



Questions pertaining to professional responsibility on the exam will be intermixed with questions for all the process groups. You won't see a section or set of questions devoted solely to professional responsibility, but you will need to understand all the concepts in this area. I've devoted a good portion of the last chapter of this book to discussing professional responsibility topics.

All unanswered questions are scored as wrong answers, so it benefits you to guess at an answer if you're stumped on a question.

After you've received your certification, you'll be required to earn 60 professional development units (PDUs) every three years to maintain certification. Approximately one hour of structured learning translates to one PDU. The PMI® website details what activities constitute a PDU, how many PDUs each activity earns, and how to register your PDUs with PMI® to maintain your certification. As an example, attendance at a local chapter meeting earns one PDU.

Who Should Buy This Book?

If you are serious about passing the PMP® exam (or the CAPM® exam for that matter), you should buy this book and use it to study for the exam. This book is unique in that it walks you through the project processes from beginning to end, just as projects are performed in practice. When you read this book, you will benefit from the explanations of specific *PMBOK® Guide* processes and techniques coupled with real-life scenarios that describe how project managers in different situations handle problems and the various issues all project managers are bound to encounter during their careers. This study guide describes in detail the exam objective topics in each chapter and has attempted to cover all of the important project management concepts.

Interactive Online Learning Environment and Test Bank

The interactive online learning environment that accompanies *PMP® Project Management Professional Exam Study Guide, Tenth Edition* provides a test bank with study tools to help you prepare for the certification exam—and to increase your chances of passing it the first time! The test bank includes the following tools:

Sample Tests All of the questions in this book are provided, including the **Assessment Test**, which you'll find at the end of this Introduction, and the **Chapter Tests** that include the review questions at the end of each chapter. In addition, there

are two **Bonus Exams** and two practice **CAPM Exams**. Use these questions to test your knowledge of the study guide material. The online test bank runs on multiple devices.

If you are interested in more practice exams, check out the *PMP Project Management Professional Practice Tests, 2nd Edition*, co-authored by me and Vanina Mangano.

Flashcards Questions are provided in digital flashcard format (a question followed by a single correct answer). You can use the flashcards to reinforce your learning and for last-minute test prep before the exam.

Other Study Tools Several bonus study tools are included:

Glossary The key terms from this book and their definitions are available as a fully searchable PDF.

Bonus Questions Supplement the topics in the book with bonus questions that'll help you test your knowledge and understanding of concepts.

Audio Instruction and Review With over two hours of audio instruction, you can listen to the author review essential concepts, helping you to increase your understanding and fine-tune critical skills.



Go to www.wiley.com/go/sybextestprep to register and gain access to this interactive online learning environment and test bank with study tools.

How to Use This Book and the Test Bank

I've included several study tools, both in the book and in the test bank at www.wiley.com/go/sybextestprep. Following this Introduction is an assessment test that you can use to check your readiness for the actual exam. Take this test before you start reading the book. It will help you identify the areas you may need to brush up on. The answers to the assessment test appear after the last question of the test. Each answer includes an explanation and a note telling you in which chapter this material appears.

Exam Essentials appear at the end of every chapter to highlight the topics you'll most likely find on the exam and help you focus on the most important material covered in the chapter so that you'll have a solid understanding of those concepts. However, it isn't possible to predict what questions will be covered on your particular exam, so be sure to study everything in the chapter.



Like the exam itself, this study guide is organized in terms of process groups and the natural sequence of events a project goes through in its life cycle. This is in contrast to other study guides, where material is organized by Knowledge Area (Human Resource Management, Communications Management, and so on); such organization can make mapping the processes in each Knowledge Area to process groups confusing when you're studying for the exam.

Review questions are also provided at the end of every chapter. You can use them to gauge your understanding of the subject matter before reading the chapter and to point out the areas in which you need to concentrate your study time. As you finish each chapter, answer the review questions and then check to see whether your answers are right—the correct answers appear in Appendix A. You can go back to reread the section that deals with each question you got wrong to ensure that you answer the question correctly the next time you are tested on the material. If you can answer at least 80 percent of the review questions correctly, you can probably feel comfortable moving on to the next chapter. If you can't answer that many correctly, reread the chapter, or the section that seems to be giving you trouble, and try the questions again. You'll also find more than 200 flashcard questions on the website for on-the-go review.



Don't rely on studying the review questions exclusively as your study method. The questions you'll see on the exam will be different from the questions presented in the book. There are 200 randomly generated questions on the PMP® exam and 150 on the CAPM®, so it isn't possible to cover every potential exam question in the review questions section of each chapter. Make sure you understand the concepts behind the material presented in each chapter and memorize all the formulas as well.

In addition to the assessment test and the review questions, you'll find bonus exams online. Take these practice exams just as if you were actually taking the exam (that is, without any reference material). When you have finished the first exam, move on to the next exam to solidify your test-taking skills. If you get more than 85 percent of the answers correct, you're ready to take the real exam.

Finally, you will notice various Real-World Scenario sidebars throughout each chapter. They are designed to give you insight into how the various processes and topic areas apply to real-world situations.

The Exam Objectives

Behind every certification exam, you can be sure to find exam objectives—the broad topics in which the exam developers want to ensure your competency. PMP® exam objectives are listed at the beginning of every chapter in this book.



Exam objectives are subject to change at any time without prior notice and at the sole discretion of PMI®. Please visit the Certifications page of PMI®'s website, www.pmi.org, for the most current listing of exam objectives.

How to Contact the Author

I welcome your feedback about this book or about books you'd like to see from me in the future. You can reach me at Kim.Heldman@gmail.com. For more information about my work, please visit my website at KimHeldman.com.

PMP®: Project Management Professional Exam Study Guide, 10th Edition

Updated for the 2020 Exam

Exam Objectives

PMP Exam Domains

Domain	Chapter
1. People	All Chapters
1.1 Manage conflict	10
1.2 Lead a team	1, 2, 3, 4, 5, 6, 9, 10
1.3 Support team performance	9
1.4 Empower team members and stakeholders	2, 3, 4, 8, 9, 11, 12
1.5 Ensure team members/stakeholders are adequately trained	9
1.6 Build a team	3, 4, 5, 6, 9,
1.7 Address and remove impediments, obstacles, and blockers from the team	9, 10

Domain	Chapter
1.8 Negotiate project agreements	8, 10
1.9 Collaborate with stakeholders	2, 3, 4, 6, 10
1.10 Build shared understanding	3, 4, 6, 8,
1.11 Engage and support virtual teams	9
1.12 Define team ground rules	10
1.13 Mentor relevant stakeholders	3, 6
1.14 Promote team performance through the application of emotional intelligence	9
2. Process	All Chapters
2.1 Execute project with urgency required to deliver business value	3, 5, 6, 8, 9
2.2 Manage communications	1, 3, 6, 10, 11, 12
2.3 Assess and manage risks	7, 10, 11
2.4 Engage stakeholders	3, 6, 11
2.5 Plan and manage budget and resources	6, 8, 12
2.6 Plan and manage schedule	5, 12
2.7 Plan and manage quality of products/deliverables	8, 10, 11
2.8 Plan and manage scope	4, 12
2.9 Integrate project planning activities	2, 8, 11, 12
2.10 Manage project changes	11
2.11 Plan and manage procurement	2, 8, 10, 11
2.12 Manage project artifacts	5, 6, 7, 10, 11, 12
2.13 Determine appropriate project methodology/ methods and practices	1, 2, 3, 4, 5, 6, 7, 8, 9, 10
2.14 Establish project governance structure	2, 8
2.15 Manage project issues	7, 11
2.16 Ensure knowledge transfer for project continuity	12
2.17 Plan and manage project/phase closure or transitions	12

Domain	Chapter
Business Environment	All Chapters
3.1 Plan and manage project compliance	2, 3, 4, 7, 11
3.2 Evaluate and deliver project benefits and value	2, 3,4, 6, 8, 11
3.3 Evaluate and address external business environment changes for impact on scope	3, 11
3.4 Support organizational change	3, 4, 5, 8, 11