

PMP® Exam Prep

**Accelerated Learning to Pass the
Project Management Professional (PMP)® Exam**

By Rita Mulcahy, PMP, et. al

 **RMC** PUBLICATIONS™

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This and all editions of this book are dedicated to Rita Mulcahy.
Her vision made RMC the company it is today. She had a profound
influence on so many people—her readers, her students,
and, not least, her employees.
May we all apply what we learned from her and embody her passion for
improving our organizations, our communities, and our world
through effective project management.

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History of This Book

The first edition of Rita Mulcahy's *PMP® Exam Prep* was published in 1998, and at the time, it was the first and only comprehensive resource dedicated to PMP exam preparation.

As a project manager in the late 1990s—as well as one of the world's first certified PMPs—Rita was frustrated by the lack of quality PMP preparation materials available to her and her colleagues. So, combining her knowledge of accelerated learning with her extensive project management experience, Rita wrote the first draft of *PMP® Exam Prep*. Since then, the popularity of the book has grown immensely, through ten wildly successful editions. Today, the book is by far the best-selling PMP exam preparation guide in the world, with thousands of copies in circulation.

Tragically, Rita passed away on May 15, 2010. RMC continues her mission today with the tenth edition of the *PMP® Exam Prep* book, and with a growing line of other project-management-related courses and products that promote her vision of improving the world through effective project management. *PMP® Exam Prep* and its related products are used as study tools by many project managers across the globe, and in hundreds of classroom-based prep classes at universities, training companies, and corporations.

Free Updates The purchase of this book includes access to updates regarding the PMP exam, as well as additional tricks, tips, and information to help you prepare for the exam. Access this information at rmcls.com. Have this book with you when you go to the website as you'll need to verify your product purchase.

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Contact Us We love to hear your feedback. Is there anything in this book that you wish was expanded? Is there anything that we focus on too much, or is there anything not covered that you think should be here? We would love to hear from you. Send us an email at info@rmcls.com.

Introduction to the Tenth Edition

Welcome to the tenth edition of *PMP® Exam Prep*. It's been 20 years since Rita published the first edition of this book. RMC has come far since the publication of the first edition back in 1998, as has the project management profession.

Back when the first edition was published, most project managers were in the United States. Now there are more international project managers than ever before. As a result of this industry growth, RMC's best-selling materials are now sold all over the world.

Project management is also a more complex profession than it used to be. Along with the processes, concepts, tools, and techniques that were added within the last couple of years, there are now just as many adaptive approaches to project management as there are predictive. The general methodologies and overall practices of project management have changed dramatically, which has increased the size of a project manager's toolbox.

These updates have resulted in changes to the exam. There is more to learn today than ever. This increased complexity is reflected in the tenth edition of our best-selling PMP Exam Prep book.

First, and one of the more significant changes, is the introduction of three new domains within which project management exists: People (Domain I), Process (Domain II), and Business Environment (Domain III). What does this mean for the process groups of initiating, planning, executing, monitoring and controlling, and closing? That's a great question, and we have you covered. Our new and improved chapter three, now titled "Processes and Domains," addresses both the process groups as well as each of the three domains in a clear and easy-to-read format that will prepare you to not only understand the groups and domains, but will give you all of the knowledge you need to pass the exam.

Another big change is the acknowledgement of the importance of PMI's *Examination Content Outline* (ECO). It is now more important than ever to read and understand the ECO as it covers the domains and introduces adaptive approaches to project management and the PMP exam. Throughout each chapter of the tenth edition of this book, we've included agile terms and concepts. You may see these terms and concepts on the exam, but you also need to know them to become a more adaptive project manager.

While these are significant changes, important aspects of our book remain the same. First, and most importantly, is the conversational tone of the book. The tenth edition maintains its down-to-earth conversational style—explaining things simply and clearly. Students say that when they read this book, it feels like Rita is talking to them. In many ways, she still is.

Another thing that remains the same is our continued commitment to helping our students not only pass the exam but also become better project managers. That is what the book, and, in fact, our company, is all about.

As you read this book, know that our plan is not to have you memorize a bunch of rules and formulas just to pass the exam and then promptly forget them. For one thing, given the situational nature of most questions on the exam these days, we believe that such an approach would be unsuccessful. For another, it's not what we're about. This book is not just a prep guide—it's a learning tool. If you master the contents of our book, you will pass the exam, but it's more than that. After you learn what we have to teach, you'll be a better project manager. At the end of the day, that's what the world needs. Still, our goal with this book is to get you to pass the exam on the first try.

I couldn't allow this book to go out the door without acknowledging the efforts of the team at RMC that made this happen. In particular, I'd like to thank Mike Griffiths, Margo Kirwin, Levi Satterlee, and Tori Turnquist for their dedication and hard work on this edition.

Margo served as our leading subject matter expert. In addition to being an outstanding trainer, Margo has an extensive background in instructional design, which she brought to the development of this edition. She is also a talented writer who was able to maintain the conversational tone and feel of the book while working hard to explain all the elements of project management in a clear and easy-to-read way.

Mike Griffiths was also an important subject matter expert for this edition. Mike has a broad background in agile and is the author of RMC's *PMI-ACP Exam Prep* book, the best-selling resource for passing the PMI-ACP exam. Mike was able to work and collaborate directly with the project team to ensure our new content specific to agile would not only meet the needs of our students but properly prepare someone to pass the new PMP exam on their first try. Needless to say, Mike was a vital resource in creating this book and we couldn't have done it without him.

Finally, there is Tori, who served as the project manager and content editor for this update. In addition to being a fantastic writer, Tori brought an incomparable set of skills that allowed her to help develop and edit content with our subject matter experts while also managing the constantly moving pieces of the project. Without her, this book would not have been published on time, if at all.

When Rita created RMC, she did so to help people. That is still our goal and one of the driving values of this company. So enjoy the book, learn, and have fun.

What are you waiting for? Go get 'em.

Tim Mulcahy

President and CEO

RMC Learning Solutions and RMC Publications

Tricks of the Trade® for Studying for This Exam

ONE

Preparing to take the PMP exam is a journey. If you let it, this journey can help you grow your career and develop your skills and abilities. This isn't just about passing an exam—you can and will become a better project manager. This opportunity to learn is one of the best reasons to get your PMP certification.

To pass the PMP exam, you cannot simply cram a lot of information into your brain and try to retain it just long enough to get through the test. You need to truly understand the process of project management and what value that process can bring to your projects. The PMP exam is designed to prove your knowledge and experience in applying the art and science of project management.

In addition to the learning opportunity, there can also be financial incentives for passing the exam. A salary survey conducted by the Project Management Institute (PMI®) found that PMP-certified project managers, across all countries surveyed, are paid on average 25 percent more than those without the certification. RMC has had students who received a bonus, a raise, or both when they passed the exam. Others have reported they were offered a job when hundreds of other qualified candidates had applied, simply because they were PMP certified. Having a PMP certification can be the reason you get a job, keep your job, or are promoted.

Qualifying to Take the Exam

To take the PMP exam, you must meet the requirements outlined by PMI. The current requirements are summarized in the following table. Requirements are subject to change, so make sure you review the requirements at pmi.org.

A four-year degree	— OR —	A high school diploma or an associate's degree (or global equivalent)
Three years leading projects		Five years leading projects
35 hours of project management education/training or CAPM® certification		35 hours of project management education/training or CAPM® certification

Keep in mind that just because you qualify on paper to take the exam doesn't mean you'll pass it. You must know project management and have experience applying it—this includes both managing and leading. Consider taking PMI's CAPM® exam if you don't meet the requirements listed in the previous table. You can find the requirements for the CAPM® exam at pmi.org.

Are You Ready for the PMP Exam?

In RMC's experience, half of those who fail the exam do so because they have not had project management training that uses PMI terminology and concepts. This is a serious factor to consider in determining whether you are ready to take the exam. Understanding PMI's approach to managing projects is not as simple as reading the *PMBOK® Guide*. Although reading the *PMBOK® Guide* will help you improve your knowledge, it will not teach you project management. The *PMP® Exam Prep* book will explain the project management process and help you understand it from PMI's perspective; however, if you find that many of the concepts and terms presented in this book are new to you—or you do not use important tools discussed in this book (such as a charter, WBS or prioritized backlog, network diagram, and management plans)—you probably need fundamental project management training before continuing to study.

Another percentage of people who fail the exam do not have real-world experience working on large projects and do not understand the breadth of possible project types. Instead, they may be managing small projects; some might not even be working as a project manager. On the exam, it is helpful to answer questions from the perspective of a project manager who is managing large projects, unless a question scenario tells you otherwise. Therefore, the more experience you have with large projects, the better prepared you will be for the exam.

The following are examples of large projects:

- Designing and building a new call center (versus handling small call center projects)
- Designing a new manufacturing process (versus customizing a standard product for a customer)
- Installing integrated software across a company (versus installing software system updates)
- Designing and constructing a new building (versus repainting an existing building)

What is the depth of your knowledge and understanding of project management? Do you routinely experience two or more of the following problems on projects? If so, you may benefit from learning more about project management prior to taking the exam.

- Cost or schedule overruns
- Unrealistic schedules
- Excessive changes to the scope or schedule
- Communication problems and increased conflict
- Running out of time near the end of the project
- Unsatisfactory quality
- Low morale
- Team member uncertainty about what needs to be done
- Excessive rework and overtime
- Too many project meetings

Now think about your project management experience, particularly your experience working on large projects. Review the following list of topics. Do you understand these topics, and do you currently apply the tools and techniques included in this list when working on your projects?

- The step-by-step project management process, including understanding why each step is necessary
- The roles of the project manager, sponsor, product owner, team, and stakeholders
- The use of historical information from previous projects, including lessons learned
- What a formal project charter is and knowing what it requires
- What a work breakdown structure (WBS) is and how to create it

- What a prioritized risk-adjusted backlog is and how to use it
- How to manually create a network diagram
- What the critical path is, how to find it, and what benefits it provides the project manager
- Rough order of magnitude (ROM) versus three-point estimating or estimating story points
- Monte Carlo analysis
- Earned value analysis
- Schedule compression (crashing and fast tracking)
- Managing float
- How to create a realistic schedule
- Managing the quality of both the project and the resulting product(s) or deliverables
- Developing relationships with stakeholders, and keeping them interested and involved in the project
- What is included in the process of risk management
- Calculating reserves and understanding their relationship to risk management
- Creating a realistic and approved project management plan that you are willing to be held accountable to achieving
- Monitoring and controlling the project according to the project management plan
- Managing change requests, and controlling change
- Planning and developing iteratively and incrementally for change-driven projects
- Considering the professional and social responsibilities expected of a project manager when managing a project

When working on projects, a project manager doesn't have time for ineffective project management activities. A project can easily get out of control if the project manager spends too much time solving problems rather than preventing them, or micromanaging instead of making sure roles and responsibilities are clear. When preparing for the exam, think about the concepts presented in this book (and those you've learned through your training) in terms of what a project manager of a large project should be doing. This will help you identify gaps between your own project management experience and PMI's approach to managing projects, and will therefore better prepare you to answer questions on the exam.

Applying to Take the Exam

You must submit an application to PMI to take the exam. Applications may be submitted online. After submitting your application, you'll receive a notice that will confirm your application has been accepted; you will then be prompted to pay for your exam appointment. Once payment is received, you'll receive an email authorizing you to make an appointment to take the exam. Once you receive your authorization, you must pass the exam within one year. You can take the exam up to three times within that year; if you fail all three times, you must wait one year to reapply for the exam. You may be subject to an audit of your application before it is approved.

The exam is usually offered on a computer at a designated testing site, but this may vary based on location. Alternatives to traditional testing centers, such as an online proctored exam, may also be an option. It's important to understand that there are specific rules and instructions for each type of exam. In most cases, the confirmation of your scheduled exam will give you specific details. Visit pmi.org for the most accurate and up-to-date information about testing options, locations, and exam languages available.

How to Use This Book

Be Sure You Have Current Materials for the Exam Before using this book, make sure it's the correct edition. RMC products are updated to give you the most current information available, and take into account the latest changes to the exam. Previous editions of this book are out of date and should not be used to try to pass the exam. This edition of the *PMP® Exam Prep* book is in alignment with the *PMBOK® Guide, Sixth Edition* that was published September 6, 2017, and is meant to be used to study for exams taken after December 31, 2020. This edition also reflects the information in the *Examination Content Outline (ECO)* dated June 2019.

How This Book Is Organized Most of the chapters in this book have been organized the same way: an introductory discussion, a list of Quicktest topics (generally listed in order of importance), review materials, and a practice exam. All page references in this book refer to the *PMBOK® Guide, Sixth Edition*, unless otherwise stated. This *PMP® Exam Prep* book can be used alone, but it is also part of our PMP Exam Prep System that includes our PM FASTrack® Cloud exam simulator as well as our *Hot Topics* flashcards.

Introduction to Each Chapter The introductory discussion provides an overview of the chapter and key information for understanding the material covered in the chapter. Chapters 4 through 13 include tables that outline project management processes and tasks. For the exam, you will need to understand the project management processes in the *PMBOK® Guide*, the domains and tasks in the ECO, and be able to relate them to one another.

Quicktest The list at the beginning of each chapter indicates the topics covered and their general order of importance. To test your knowledge of chapter content and to review what is most important, refer back to this list when you are finished with each chapter.

Rita's Process Chart™ Rita's Process Chart™ will help you understand the process of managing a project. It is a key trick for passing the exam with less study. You will see this chart and its explanation in chapter 3, "Processes and Domains." Use the chart to understand how the different knowledge areas relate to the efforts involved in the project management process.

Review Materials and Exercises This book contains extensive review materials and exercises within each chapter. These materials have been developed based on accelerated learning theory and an understanding of the difficult topics on the exam. Make sure you do the exercises rather than jumping right to the answers. Do not skip the exercises, even if their value does not seem evident to you. The exercises and activities are key benefits of this book and will help you pass the exam.

The answers are listed immediately following the exercises. We have found that it is most effective to place the answers right after the exercises rather than later in the book.

Also be aware that you'll be prompted to create and use an Exercise Notebook. Your Exercise Notebook will serve as an answer log for all of the exercises included in this book. We have numbered each exercise and encourage you to record these numbers in your Exercise Notebook. Use this tool to keep track of any gaps in your knowledge. Pay attention to any patterns in gaps. At any time, you may review your Notebook for any incorrect answers and retry an exercise.



Included in the review material are tricks to passing the exam called Tricks of the Trade® (a registered trademark of RMC). These tricks are designated by the image shown here to the left and will give you some extra insight about what you need to know about project management and how to study for the exam.



Our method of helping you prepare for the exam does not focus on rote memorization, but on understanding project management. The few things you should memorize are designated by this image.

Practice Exam The practice exam at the end of chapters 2 through 13 allow you to review the material and test your understanding. Refer to the “How to Study for the PMP Exam” section on page 13 to understand how and when to use these practice exams as part of your study plan. On the following pages, you will find a score sheet to use as you take the practice exams.

The practice exam questions are representative of the knowledge and principles tested on the exam. Keep in mind that you cannot simply practice answering questions to prepare for the exam. The questions in this book help you assess your knowledge and become familiar with the types of questions on the exam. Make sure to focus your study efforts on reading this book, doing the exercises and review activities, and filling gaps in your project management knowledge.

Endnotes Throughout this book, you will see superscripted note references when many project management terms are first introduced. These notes provide the historical origin of the terms or concepts and are explained in the back of this book. Historical origin is not tested on the exam. These notes are provided for your interest and reference. For some, understanding the development of a concept helps them remember it better. For others, such information is a distraction. If you find these notes distracting, simply focus your study efforts on the primary content of this book.

Resource Page While not directly included in this book, the PMP Exam Prep Resource Page at rmcls.com/extras serves as a location for additional information that will be helpful when studying for the exam. Be sure to frequently review the materials included on this page as it will help solidify your overall understanding of project management.

Using This Book with PM FASTrack® Cloud Exam Simulator This book may be used on its own or in conjunction with the PM FASTrack® Cloud exam simulator. For information about using PM FASTrack® in conjunction with this book, see Plan A under the “How to Study for the PMP Exam” section on page 13. For a free exam simulator demo, visit exams.rmcls.com.

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