



**PROFESSIONAL
BAKING**

SIXTH EDITION

WAYNE GISSLEN

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Anne Smith

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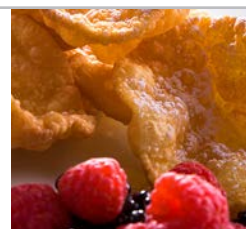
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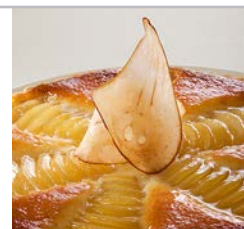
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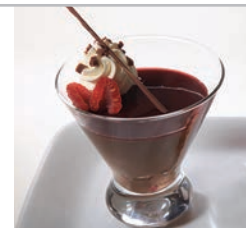
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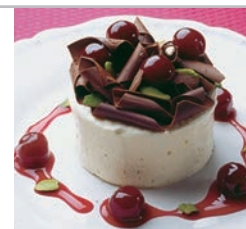
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Preface

EACH NEW EDITION of *Professional Baking* is released into a world of growing interest in fine baking. The rebirth of artisan baking was well underway when the previous edition was published, and this interest has been flourishing ever since. Professionals as well as enthusiastic amateurs and even some consumers are looking for more detailed information about the technical aspects of baking. At the same time, related concerns, such as those about food allergies, diet, and health, are having a noticeable impact on the art and science of baking and pastry making.

Professional Baking, which has been a widely used resource and teaching tool for tens of thousands of students since it was first published, likewise continues to grow and change with the industry. This **Sixth Edition** incorporates a wealth of new material designed to help both the beginning baker and the experienced professional meet the demands of this dynamic environment. Even with these developments, however, the focus of the text remains, as it always has, on a solid grounding in the basics, presented in a straightforward and easy-to-grasp style.

What's New

As with past revisions, *Professional Baking, Sixth Edition* has been planned in close collaboration with instructors representing schools with a variety of baking programs. The revision process for this edition began early, soon after the publication of the previous edition, as I began to collect suggestions and responses from as many sources as possible. Instructors who daily face the challenge of teaching their craft in our constantly evolving industry have brought a wealth of insight, and I am grateful for their contributions. As a result of this ongoing dialog, a number of significant additions have been made to the **Sixth Edition**, among them:

- Chapter 23, Dessert Presentation, has been reconceptualized to show and discuss *plating techniques appropriate for the multitude of food-service operations*. Photos now accompany every dessert preparation. There is also a sequence showing how one dessert can be plated in multiple presentations.
- Throughout the book, more than *180 new photos and illustrations*, including new dessert presentation blueprints, have been added.
- New formulas have been introduced; dozens more have been revised and improved.
- New information on the *evolution of modern bread* can be found in Chapter 1.
- A discussion of the *impact of oxidation in the mixing process* is new to Chapter 5.
- New material on *mixing times and speeds for bread, including the short mix, improved mix, and intensive mix* is included in Chapter 6, as well as an explanation of *dough strength*. There is also enhanced coverage of preshaping and rounding dough, along with new procedures for shaping.
- Chapter 8 has a new section on using the *lean yeast dough formulas* as well as a table on the mixing times, fermentation, and folds, based on the mixing technique used.
- Now a part of Chapter 9 is new information on *yeast selection, plus the mixing and baking options for rich yeast doughs*.
- Expanded information is provided on ganache and mousses in Chapter 12. New information on *gelées* is added, as well.
- More information on the three main doughs for classical pastry—*pate brisée, pate sucrée, and pate sablée*—is given in Chapter 14.
- The section in Chapter 17 on assembling and icing simple cakes is expanded to focus on the *four components of planning a cake*: cake, icing, filling, and décor. In addition, the chapter now includes information on the useful technique for applying a masking layer of icing to a cake.
- A *new procedure for applying glaze* is now in Chapter 18.
- The *sanding method* for cookie-mixing methods is found in Chapter 19.
- *Crèmeux* is included as one type of rangetop pudding in Chapter 20.
- An extensively revised explanation of *tempering chocolate*, including details of *cocoa butter crystal melt points*, is featured in Chapter 24. In addition, new procedures and photos for fine chocolate work are explained and illustrated.
- *Working with isomalt* has been added to Chapter 26, complete with guidelines for preparing isomalt.

Goal of This Text

The goal of *Professional Baking* is to provide students and working chefs with a solid theoretical and practical foundation in baking practices, including selection of ingredients, proper mixing and baking techniques, careful makeup and assembly, and skilled and imaginative decoration and presentation. It is designed as a primary text for use in colleges and culinary schools, baking courses within broader food-service curricula, and on-the-job training programs, as well as providing a solid reference for professional bakers and pastry chefs.

The methods and procedures in this book are primarily those of small bakeshops and food-service organizations. The

emphasis is on producing high-quality handcrafted items. Development of manual skills is stressed. Such skills are a valuable asset to all students, even those who eventually move on to more industrialized, automated production such as that found in large commercial bakeries.

Professional Baking focuses on both *understanding* and *performing*. The practical material is supported by a systematic presentation of basic theory and ingredient information, to ensure that students learn not only what techniques work but also why they work. Procedures for basic bread and pastry doughs, cake mixes, creams, and icings form the core of the material. Much of the text is devoted to step-by-step procedures and production techniques. The discussion of techniques is reinforced with straightforward formulas that allow students to develop their skills while working with large or small quantities.

Those students who have developed a thorough understanding and mastery of basic techniques are usually eager to progress to fine pastries and other advanced work. To that end, the basic techniques and formulas that form the core of the book are supplemented with explanations of advanced techniques and formulas, enabling students to learn and practice a broad range of skills for producing fine pastries, cakes, and decorative pieces. Emphasis here is on developing manual skills for careful detailed work, rather than on producing large quantities. Those whose careers or interests lead them to restaurants, rather than bakeries and pastry shops, will find a detailed discussion of the principles of designing and plating appealing dessert presentations.

Organization of the Text

Two factors strongly influence the arrangement and organization of *Professional Baking*. First is the aforementioned dual emphasis of the book, on both *understanding* and *performing*. It is not enough to present readers with a collection of formulas; nor is it sufficient to give them a freestanding summary of baking theory and principles. These must be presented together, and the connections between them made clear. In this way, when students practice preparing specific items, their study of theory helps them understand what they are doing, why they are doing it, and how to achieve the best results. At the same time, each formula they prepare helps reinforce their understanding of the basic principles. Knowledge builds upon knowledge.

The second factor revolves around the fact that most of a baker's activities fall naturally into two categories: (1) mixing, baking, and/or cooking doughs, batters, fillings, creams, and icings, and (2) assembling these elements (for example, baked cake layers, fillings, and icings) into finished pieces. The first category of tasks requires careful selection of ingredients, accurate measurement, and close attention to mixing and baking procedures. Naturally, most of the detailed guidelines and procedures in this book are devoted to these kinds of tasks. The second category, the assembly of prepared components, is less a matter of scientific accuracy than of manual skills and artistic abilities.

This division of tasks is so well known to the practicing baker that it is usually taken for granted. Consequently, it is often neglected in written materials. As far as is possible, the

arrangement of subjects in this text reflects the working practices of bakeshops and kitchens. In a typical facility, operations such as mixing pie doughs, cooking fillings, preparing icings, and mixing and baking cake layers are done separately and in advance. Then, depending on demand, finished products can be assembled quickly, shortly before they are needed. In this book, the procedures for mixing and baking cakes, for example, are addressed separately from the procedures for assembling, icing, and decorating them. These are very different techniques, and students find it helpful to approach them in a realistic context. Similarly, basic creams and icings are fundamental elements required for making a wide range of pastries, cakes, and other desserts; hence, they are treated early in the text.

Although the arrangement of chapters in *Professional Baking* represents a logical grouping of products and procedures, it is not intended to dictate the order in which instructors should teach the units. Every curriculum has different requirements and constraints, and the sequence of instruction varies from school to school and instructor to instructor. The arrangement of material in this text is designed to support flexibility. Instructors are encouraged to teach the material in the order that suits their needs. And because baking techniques are highly interdependent, frequent cross-references are included to help students recognize these connections.

The Role of the Chef Instructor

An important element in the text is the participation of the instructor, whose ideas and professional experience are invaluable to students. There is no substitute for firsthand seeing and doing under the guidance and supervision of experienced teachers. Baking is an art as much as a skill, and on many points bakers and pastry chefs differ in their preferences. The text frequently explains possible variations in theory and procedure, and students are encouraged to consult their instructor for the techniques he or she prefers. Throughout the book, the instructor's input is encouraged. Exposure to a variety of formulas and techniques can only enrich students' education and enhance their skills.

The text is designed for readability and practicality:

- Discussions of baking theory are presented in easy-to-read, point-by-point explanations.
- Techniques and makeup methods are detailed in concise yet complete step-by-step procedures.
- The format emphasizes and highlights key points using bold type, italics, and numbered sequences, making it easy to locate and review basic information at a glance.

The Formulas

Nearly 900 formulas and recipes are given for the most popular breads, cakes, pastries, and desserts. These formulas have not been selected at random, merely for the sake of having formulas in the book. Rather, they are carefully chosen, developed, and tested to teach and reinforce the techniques students are learning, and to strengthen their understanding of basic principles.

The goal is for students to understand and use not only the formulas in this book, but any formula they encounter.

The formulas in this book are instructional; their purpose is not only to give directions for producing baked goods but also to provide an opportunity to practice, with specific ingredients, the general principles being studied. Directions within formulas are often abbreviated. For example, instead of spelling out the straight dough method for breads in detail for each dough mixed in this way, the book refers the student to the preceding discussion of the procedure. By thinking and reviewing in this way, students derive a stronger learning experience from their lab work.

Many formulas are followed by variations. These are actually whole formulas given in abbreviated terms. This feature encourages students to see the similarities and differences among preparations. For example, there seems little point in giving a formula for cream pie filling in the pie chapter, a formula for custard filling for *éclairs* and *napoleons* in the pastry chapter, and separate formulas for each flavor of cream pudding in the pudding chapter, without pointing out that these are all basically the same preparation. Skill as a baker depends on knowledge, and being able to exercise judgment based on that knowledge, not just on following recipes. The ability to exercise judgment is essential in all branches of cookery but especially so in baking, where the smallest variation in procedure can produce significant changes in the finished product. The formulas in this text will help students develop good judgment by requiring them to think about the relationships between general procedures and specific products.

Students are encouraged to study Chapter 2, Basic Professional Skills: Bakeshop Math and Food Safety before proceeding with any of the formulas. The second section of the chapter explains the principles of measurement, the various formats used for the formulas and recipes in this book, techniques for converting yield, and U.S. and metric measurements, and baker's percentages.

Features of the Book

Illustrations

The almost 1,000 photos and illustrations throughout the book illustrate basic manual techniques shown from the point of view of the person performing them, identify ingredients, and demonstrate finished dishes and plating techniques. Numerous line drawings also enhance the text, illustrating pieces of equipment you'll encounter in the professional bakeshop along with a variety of makeup techniques for various products.

Pronunciation Guides and Glossaries

Much kitchen terminology is taken from French, but also Italian, German, Dutch, Spanish, and other languages. Phonetic guides are included for difficult words, giving the approximate pronunciation using English sounds. (Exact rendering is impossible in many cases because French and other foreign languages have sounds that don't exist in English.) Because food-service workers must be able to communicate with each other, definitions of terms introduced in the text are summarized in the glossary at the end of the book.

In addition, a glossary containing *audio pronunciations*, all recorded by native speakers, is contained on the CulinarE-Companion™ recipe management software that accompanies this book.

Format

This book is designed to be readable and useful. The format emphasizes and highlights key points in bold type, italics, and numbered and bulleted sequences, so basic information can be located and reviewed at a glance.

Realistic Procedures

Although supported by discussions of baking theory, procedures given here are based on actual practices in the industry. Presentation and service of the finished product are considered in detail, as is pre-preparation, or *mise en place*—so essential to the organization of the professional working environment. At the same time, the major emphasis is on quality, too often neglected in the quest for convenience.

Even a book as large as this one cannot possibly contain all one needs to know. Other information is included if it has a direct bearing on kitchen and bakeshop work. Finally, although much of what we talk about is strongly influenced by the baking of other nations, the practices discussed are primarily those of North American food service.

Media and Supplements

WileyPLUS to Accompany Professional Baking

WileyPLUS, Wiley's online teaching and learning environment, integrates the entire digital textbook with the most effective instructor and student resources to accommodate every learning style.

With WileyPLUS:

- Students achieve concept mastery in a rich, structured environment that's available 24/7.
- Instructors personalize and manage their courses more effectively with assessment, assignments, grade tracking, and more.

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FOR STUDENTS

Different learning styles, different levels of proficiency, different levels of preparation—each student is unique. WileyPLUS empowers each of them to take advantage of individual strengths:

- Students receive **any time/anywhere access** to resources that address their demonstrated needs, and they get immediate feedback and remediation when needed.
- Integrated multimedia resources—including technique **videos, audio pronunciations and visual exhibits**, examples, and much more—offer multiple study paths to fit each student's learning preferences and encourage more active learning.

- For many students, culinary and bakeshop math is the one area of greatest struggle. **Math Tutor** is a new feature included in the WileyPLUS course. The goal of Math Tutor is to provide extra help and guidance for the many students who struggle with the math skills needed to become a successful chef.
- Students can take advantage of many opportunities for self-assessment linked to relevant portions of the text. They can take control of their own learning and practice until they master the material.

FOR INSTRUCTORS

WileyPLUS empowers instructors with tools and resources that make teaching even more effective:

- Instructors can customize their classroom presentations with a wealth of resources and functionality, from PowerPoint slides to a database of rich visuals. They can even add their own materials to their WileyPLUS courses.
- Instructors can identify students who are falling behind and intervene accordingly, without waiting to see them during office hours.
- Instructors can take advantage of the program's simplification and automation of such tasks as student performance assessment, making assignments, scoring student work, keeping grades, and more.

TECHNIQUE VIDEOS

More than 50 new technique videos are available as part of the WileyPLUS course with *Professional Baking, Sixth Edition*. These video clips clearly demonstrate the essential skills and procedures students must master to succeed in the professional bakeshop, and they enhance, in an engaging manner, the textbook's approach to teaching these basic skills. They can be used for study and review purposes to prepare for kitchen time or as a step-by-step presentation of these techniques.

MATH TUTOR

New **Math Tutor** whiteboard-type exercises and review are available as part of the WileyPLUS course. These video-like segments are brief examples of common math problems used in the bakeshop. These videos are intended to demonstrate and reinforce bakeshop math principles cited by instructors as the #1 issue students struggle with in this course. These tutorials allow students to see a variety of math exercises explained and calculated. Further, practice exercises are included for students to use to apply and reinforce these calculations as well.

CulinarE-Companion™ Recipe Management Software

Recipes are the ultimate test of any culinary student's skills. Reinforcing these skills is the main goal of this upgraded version of CulinarE-Companion™. This easy-to-use software is no longer simply a recipe management resource with a complete database of recipes from *Professional Baking, Sixth Edition*.

In addition to the nearly 900 recipes from the book, including more than 35 bonus recipes not included in the print edition, the software includes a range of useful features to make them easy to adapt, learn from, and manipulate, to suit individual needs. These additional features will not only help in the student's culinary education but also in managing and organizing his or her own recipes and related assets, such as photos and videos. The registration code included with each copy of *Professional Baking, Sixth Edition*, allows students to download this valuable software at no additional cost—and it's theirs to keep.

New Feature Highlights

Enhanced Recipe Management Tools. In addition to being able to edit, scale, view nutritional information, convert from U.S. to metric measures, and vice versa, and print, export, and share recipes, users can add their own recipes in one of two ways:

1. Directly into the database, so you can use features such as scaling and metric conversion, create shopping lists, and access the nutritional analysis.
2. Organize your existing recipe files (including Word, Excel, and PDF) so they are easy to find and classify.

Audio Pronunciations. In addition to its extensive glossary of key terms and cooking vocabulary, CulinarE-Companion now has more than 1,000 vocabulary terms and recipe names with audio pronunciations—recorded by native speakers to ensure accuracy—make learning how to say these terms correctly a snap.

Tools. Users can easily access the most important charts and conversion formulas at their fingertips, including can sizes, scoop sizes, pan sizes, and key conversion formulas.

My Files. CulinarE-Companion allows users to easily organize their recipes, images of their plated dishes, and their videos in one location. Users also can classify them for easy-to-find future reference. It's also simple to replace and update files as skills progress.

Proven Features

- Add, edit, modify, and print recipes, portion sizes, and yields, and create shopping lists.
- Search recipes and variations by main ingredient, meal, and cuisine type.
- Recalculate recipes in U.S. or metric measures.
- Perform metric conversions instantly.
- Calculate nutritional analyses of recipes in FDA format, and update nutritional analysis when an ingredient is changed.

Method Cards

As a handy reference in the kitchen, a set of six laminated **Method Cards** accompanies this book. They detail mixing methods for quick breads, cakes, cookies, and yeast doughs, as well as preparation methods for pies and pastry basics.

Additional Student and Instructor Resources

To enhance mastery of the material in *Professional Baking, Sixth Edition*, the following student and instructor supplements are available:

- The **Student Study Guide** (ISBN 978-1-118-15833-3) contains review materials, practice problems, and exercises. (Answers to questions are included in the **Instructor's Manual**.)
- The **Instructor's Manual with Study Guide Solutions** (ISBN 978-1-118-15832-6) includes teaching suggestions and test questions.
- The **Test Bank** has been specifically formatted for Respondus, an easy-to-use software program for creating and managing exams, which can be printed to paper or published directly to Blackboard, WebCT, Desire2Learn, eCollege, ANGEL, and other eLearning systems. Instructors who adopt *Professional Baking* can download the Test Bank for free. They can also upload additional Wiley resources into their LMS course at no charge.

To view and access these resources and the **Test Bank**, visit www.wiley.com/college/gisslen, click on the Instructor Companion web site link, and then click on LMS Course Student Resources; or contact a Wiley representative for more information. This newly updated and revised web site contains information for the student and instructor, and is available at www.wiley.com/college/gisslen.

PowerPoint slides are also available electronically to provide additional support in delivering course material.

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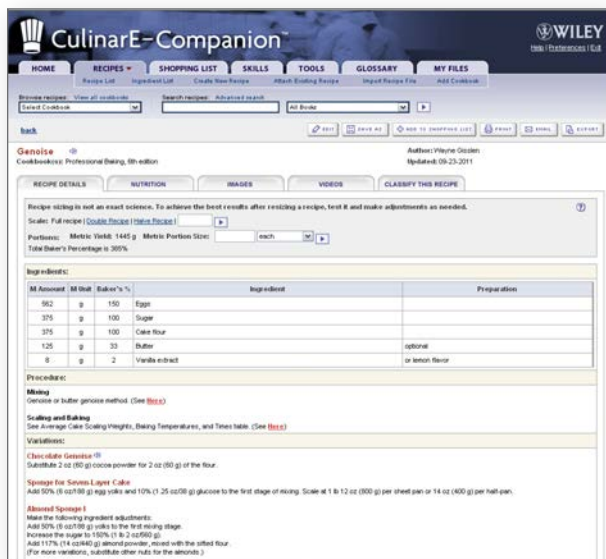
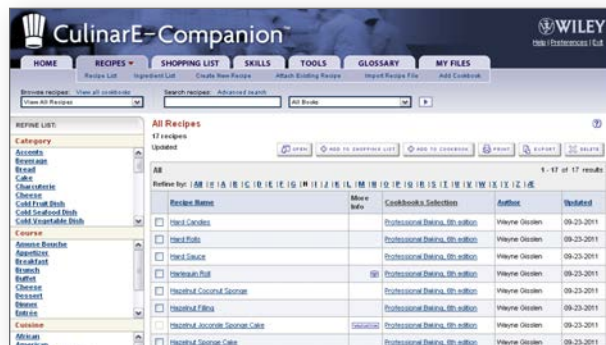


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- View recipes—click on “Professional Baking” under “Cookbooks.”
- With improved search functionality, search recipes by recipe name or even part of a name, and search by variation.
- View recipes and procedures—organized by kitchen skill: click on “Skills” tab.
- Click “Glossary” tab to access definitions from **Professional Baking’s** glossary plus hundreds of additional defined terms and audio pronunciations.

RECIPE LIST

- Refine your search by course, cuisine, main ingredient, primary cooking method, or dietary considerations.
- Add recipes to your shopping list, as well as export and print recipes.

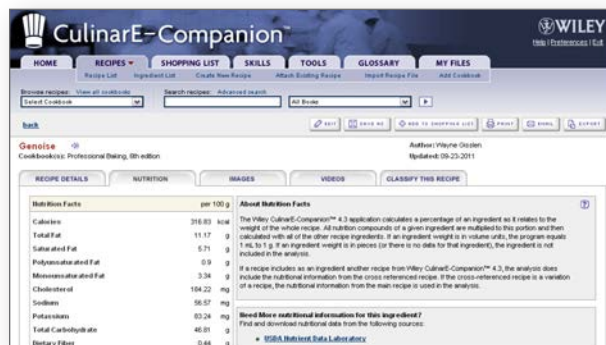


RECIPE SCREEN

- Resize recipes, perform metric conversions, show recipe notes, variations, and more!
- Referenced procedures and recipes are easily accessible by simply clicking the relevant item.
- View photos of plated dishes and techniques: click the “Images” tab. You can also upload your own photos and videos.

NUTRITIONAL INFORMATION

- View important nutritional information for ingredients and recipes.
- Nutritional information calculates automatically for all recipes, even new recipes you add, by clicking “Create New Recipe.”



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