



# what's RISING

## introduction to pastry dough



Brian Wood  
Baking & Pastry  
Instructor

The word "pâte" (French for dough, paste or batter) is classically used as a descriptor for a category of products, which are the building blocks of many traditional and contemporary creations. Dough bases are so important they are traditionally the responsibility of a department within the pastry shop or bakery. One who works in this department

is referred to as a *tourrier*. This is an important job because the care in mixing and proper handling of various dough preparations ultimately determines the quality of the pastry shop's finished products.

There are several different styles of pastry dough. Although each of them has a different texture, many of them are made with flour, fat, sugar, a liquid such as water or milk, and/or eggs in varying ratios. The texture of each dough is the result of the ingredients used, how the fat is incorporated into the dough, and how much the gluten is developed.



"The fine arts are five in number, namely: painting, sculpture, poetry, music, and architecture, the principal branch of the latter being pastry."

Antonin Carême (Marie-Antoine Carême (1783-1833))

There are some differences between the terminologies that are commonly used in the United States and those used in Europe, specifically France. Please refer to the chart below for a quick reference regarding how each dough is commonly used:

Dough	Sweet	Not Sweet	Pie	Tart	Texture	Comments, Used For
Pie Dough		X	X	X	Tender/Flaky	Pie-Sweet and Savory
Pate Brise		X	X	X	Tender	Tarts, Sweet and Savory
Pate a Foncer	(X)	X	X	X	Tender/Crisp	Tarts, Sweet or Savory. 5 Varieties based on usage. Sugar can be up to 25% FW

### Ingredient Functions for Pastry Dough

Although dough may be composed of the same basic ingredients, depending on the formula and the process, there may be different results in the physical and textural characteristics. Many of these characteristics are established by the method of preparation, and the ratio of ingredients in the formula.

Five main ingredients form the foundation for the various types of pastry dough: flour, fat, liquid (milk or water), eggs and sugar. Secondary ingredients such as salt and baking powder can also play a role. Balancing the different protein, fat, free water, and sugars within doughs is critical in obtaining successful pastry with the desired results.

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## what's inside this issue ...

introduction to pastry dough ... 2008 class schedule ... baker's tip ... recipe of the season ... tips for buying a divider ... welcome our new instructor ... and more!

# buying a divider? do your homework!



Michel Suas  
Founder

In case you haven't heard, the "monster" is back, complete with a new paint job and bright chrome: presenting the "Artisan Bread Line." Please don't be fooled by the new name—

with some of these new piston divider breadlines the only thing that has changed in the design is replacing "no time dough" with "Artisan" in the sales pitch. The guts of these "monsters" remain the same. To start, it pulls your dough through the hopper, sucking and cutting it into chunks and then pounding them to make sure it can be swallowed. Next, the monster spits out the dough for further processing, only after destroying the gluten network. This beast has no regret for what is left of your smooth fermented dough, now a white lump beaten up to the maximum.

To revive the dough after it has been knocked down, it gets spun around the conical rounder like a boxer in a ring and yes, the coach does slap it around a couple of times.

After coming off the conical rounder, the dough piece is transferred to a pocket for the "resting time." But, to make sure the dough does not fall asleep or relax, it is transferred from pocket to pocket until it is dropped into a bread molder. Oh, and guess what type of molder? A pressure plate molder, of course. Yes, we must finish with a grand finale and kill any potential of a bread with an open crumb or noticeable flavor.

We are on the road back to when all the breads looked the same and flavor offered no surprise for anyone. Remember good bread flavor? No? The bread we are returning to is like the old "no flavor bread." As the quality declines the consumer

slowly adjusts expectations and an industry wide uniformity will ultimately be seen across the board. Do we want to make sure that the customer has no preference from baker to baker?

In my opinion, the manufacturers and reps of bakery equipment are similar to those in the car industry—they try to convince themselves that they achieve something by changing the brochure's design, the advertising slogan, and adding new gadgets. However, they do not change the basics of the car, which consumes too much gas, or, in this case, the bread line, which mistreats the dough. They do not want to go back to the drawing board and invent a machine that knows how to handle the new baking procedures used today. I realize that bakery owners and managers need to find solutions to control labor costs, not to mention the higher price of flour.

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## about sfbi

Since 1996, the San Francisco Baking Institute (SFBI) has trained thousands of professional and aspiring bakers from all over the world. We have acted as the unofficial training site for several award-winning Baking USA Teams and hosted a variety of international groups—from countries including Russia, China and Japan—interested in bringing artisan baking back to their homelands.

SFBI is recognized within the baking industry as a place where artisan baking is respected, appreciated and celebrated. We are passionate about sharing our knowledge and enthusiasm with students and clients in an effort to raise the level of the craft.



## career opportunities

SFBI is looking for good people who are passionate about baking and pastry to fill the following positions:

**Baking Instructor:** Are you an experienced baker or baking instructor looking for an exciting new opportunity? SFBI is now hiring!

**Paid Intern:** Interns at SFBI assist instructors in the day to day operations of the school while working towards elevating their level of baking and pastry competence.

### How to Apply:

To apply for the **Internship**, please send a resume, letter of interest, and contact information for three professional references to [brian@sfbi.com](mailto:brian@sfbi.com) To apply for the **Baking Instructor** position, please send a resume, letter of interest, and contact information for three professional references to [michel@sfbi.com](mailto:michel@sfbi.com)

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## Flour

The type of flour used in a pastry dough formula is typically from wheat and the variety of flour used largely depends on the item being made. Most types of dough use *pastry flour* or a *low-protein bread flour* to ensure tenderness in the final product. When little gluten development and a tender, crumbly or flaky texture are desired, *pastry flour* is generally used to obtain these desired textures. For doughs which require more strength, such as when the dough contains sugar at 10% or more based on the flour weight, a *low protein* or *all purpose* flour is advised. When there is a larger ratio of flour to water, gluten can develop at a faster rate, therefore it is important to use the proper flour.

The starch coming from the flour will absorb the liquids from the dough and, upon being heated in the oven, will gelatinize, giving way to a product with structure.

## Fats

Although fats and oils are commonly classified as *shortening agents*, they can also be known as *tenderizing ingredients*.

The term “*shortening*” is classically used to describe the ability to shorten or divide the gluten strands that can toughen

flour-based dough. This term is misleading, as something must first be long in order to be shortened. When mixing pie dough, the protein in the flour is not developed and then shortened. Instead, the high presence of fat, as well as the mixing process, inhibits the flour from forming gluten. The tenderizing effect occurs when the fat in the formula coats the flour and destroys its ability to easily form long, continuous strands of gluten. In formulas that use fats, larger pieces of fat which remain dispersed throughout the dough after mixing create flakier crust. Finer incorporation of fat, on the other hand, creates “shorter” dough that is less flaky.

Fat is used to add flavor, create texture, aid in leavening and create mouth feel. Commonly used fats include *butter*, *lard*, *vegetable oils*, *hydrogenated shortening* and *emulsified shortening*. Fats used for pastry dough are typically unsalted. The range of function of hard fat in dough is to create flakiness, tenderness and moisture protection. Depending on the cost involved, as well as desired appearance, working properties, and flavor it is possible to choose from a selection of fats that will deliver a variety of outcomes.

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**So, what is a good solution?** We have four options to divide dough: *by hand with a cutter and a scale; the 20/24 part divider; a stress free divider; or a piston divider.*

All dividers and bread lines have pros and cons. Make sure you do your research before purchasing an expensive piece of equipment. Take time to test the machine with your own everyday ingredients and procedures. Do not convince yourself that you can figure out the machine later. By then it will be too late and expensive. When I test equipment, I usually do more than what I expect the equipment will actually be used for. For example, more water, fermentation, time, etc. Another method is to ask the manufacturer to run the best bread they believe they can make without conditioner, but similar to yours, using your dough weight and final shapes.

Then you can decide if their judgment of bread quality is the same as yours.

### ***A few points you should consider before buying a divider:***

- The capacity per hour of the divider should be double what you want to run the machine for, which will minimize the ram of the piston. This makes the division of the dough a little more gentle.
- If you want to produce long bread, shaped batard, or baguettes, have them pre-shaped with a curling chain instead of the conical rounder. You end up with an elongated shape. The final shaping will be more uniform without using too much pressure, for a better crumb.
- The overhead pocket proofer should have no transfer, to let the dough relax during 20mn. In overhead proofers, a lot of the resting times are set at 10mn. or less. This is too short if you want a good shaping, with flavor and open crumb.

There is a way to calculate the size of the overhead divider capacity per hour: *Example: 1800 pieces per hour divided by 3 (= 20 mn) = 600 pockets usable, plus the return pocket to be filled up and in the dryer.*

If you are in the market for a breadline I can not stress enough—“*Do your homework!*” The funds you will use to purchase equipment were earned by the quality of bread you produce. Do not risk your future earnings and limit the flexibility of the bread you want to produce because the bread line can not handle wet, fermented dough. Remember, dough conditioner is the prime ingredient used with these breadlines. *Good luck.*

—Michel Suas  
Founder

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Butter, which is prized for its flavor and mouth feel, is the fat most commonly used in dough. However, some dough benefits from shortening, such as pie dough. In this case, one should be aware of the water content in the fat, to allow for appropriate changes that might be needed in the formula.

The type of fat has many affects on both the dough and the final product. The higher melting point of manufactured fats creates dough that is easier to work with and flakier. Specialty shapes and decorative borders also benefit from manufactured fat, because they do not bake out as much as all-butter crusts.

## Liquids

While water and/or milk are found in most formulas, some formulas call for other liquids, including *cream, eggs, buttermilk or even juice*. Water, coming from the selected liquid ingredients, allows water-soluble ingredients such as salt, sugar and chemical leavening agents to be dissolved evenly. It also allows the formation of dough by hydrating the starch and protein in the flour. The other components of the liquids, such as fats, protein and carbohydrates also have an affect on the texture and baking performance of the dough.

Milk and milk derivatives add additional functions to those of water. Lactose and proteins aid in the development of crust color, firmness and crispness.

Lactic acid tightens gluten and increases its stability, resulting in a fine grain and texture. Butterfat from milk aids in making dough softer.

The rate of hydration, or absorption of water into the flour, depends on the flour's moisture content, as well as how thoroughly the butter is cut into it.



This rate of hydration is critical, because it determines the final texture and strength of the dough.

This rate of hydration is critical, because it determines the final texture and strength of the dough. If the butter is mixed into the dough too much, not enough flour will be able to hydrate the protein and starch, and the dough will be brittle and will not produce a good crust. If the fat is not worked into the dough enough, too much protein and starch will be hydrated and the dough will become tough and hard to roll out.

The water used for dough should always be cold, to help prevent the fat from softening and being absorbed by the flour, and the taste should be neutral.

Alternative liquids that are sometimes used for dough, especially pie dough, include milk, cream, sour cream and buttermilk. These liquids add additional sugar (lactose) and fat, along with acidity that makes the dough more flavorful and easier to roll out.

## Eggs

Egg products, including for the most part *whole eggs and egg yolks*, are commonly used in pastry dough. Whether they are used whole, or separated into yolks and whites, egg products perform a number of functions, including hydration, structure, texture, leavening, flavor and color. It is important to recognize that these ingredients have a significant portion of water in them which is able to hydrate protein and starch. Egg whites are approximately 90% water and yolks are roughly 50% water, meaning whole eggs are approximately 75% water. The proteins found in whole eggs coagulate during the baking process and create structure. Dough made using whole egg should provide a crust which does not fall down the sides, or shrink into the mold after the baking process. Conversely, the high ratio of fats in egg yolk tend to promote tenderness, and they also enrich the color of the dough. When egg yolks are the sole egg product/hydration in a formula, it is sometimes best suited for use as a flat base, as the tenderizing properties can cause the dough to fall down the sides of the mold. *Lecithin*, a natural emulsifier in egg yolks, helps to generate a better distribution of liquids and fats, thus making the dough smoother. If only egg whites are used in a pastry dough, they have a high ration of water as well as protein; therefore, the dough achieves strength during mixing, as well as during baking, from the coagulation of the egg white protein.

## Sugar

Sugar is used to some degree in almost all pastry dough, except for most puff pastry. It is used in varying degrees to alter not only the level of sweetness, but also the texture of the dough.

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The most common varieties used include *confectioner's sugar*, *superfine sugar* and *granulated sugar*. Exotic sugars such as *muscovado* can be used to create unique flavor as well as variation in the color of the dough.

The fine texture of powdered sugar enables the ingredient to spread easily throughout the dough and make very smooth dough which is highly regarded for its workability. The sheeting properties of dough made with powdered sugar are better than those of dough made with superfine sugar or granulated sugar. The one negative point of powdered sugar use is that the flavor of the crust from the use of this sugar is not ideal in comparison to the superfine sugar or granulated sugar.

The use of superfine sugar yields good results overall. However, the dough is noticeably more difficult to work with. The flavor from the dough is better, but sheetability is reduced as the larger grains of sugar interfere with the sheeting of the dough.

Granulated sugar has the best flavor of the three sugars, but due to the larger crystal sizes, creates a rougher texture which is undesirable for the sheeting of the dough.

Sugar's hygroscopic properties help to retain moisture. It prolongs freshness by absorbing moisture from the other ingredients, as well as from the environment. Sugar has a denaturing effect on gluten, which creates a softer crumb, finer grain and a moister, more tender texture. Sugar also contributes to the *Maillard Reaction* during the baking process, which imparts color and firmness to the crust

## Leavening Agents

Both chemical and physical leavening are used in the production of pastry dough. Physical leavening occurs in all pastry dough on a range of levels depending on the application. For example, consider the slight leavening of a pie crust in contrast to the dramatic rise of puff pastry as the result of the water content in the dough and the butter turning to steam. Dough in which the butter is incorporated to a higher degree will have a denser texture. It is in these doughs that a small amount of chemical leavening is commonly used. It is not unusual to see baking powder in pastry dough used for lining molds or for specialty tarts.



## Salt

Salt is added to most pastry dough to add flavor, improve shelf life, and round out the flavors of the flour. It also has a slight tenderizing effect on the gluten and helps to make the dough less sticky. Salt should be measured by weight to ensure that the proper quantity is used: approximately 1.5 to 2 percent based on the flour weight is standard.

## Other Ingredients

Some formulas may call for a small quantity of *lemon juice* or *vinegar* to be added to the pastry dough. The addition of an acidic liquid will help relax the gluten so the dough is more extensible for rolling out.

Acidity in the dough will also help prevent oxidation, or the slight grey discoloration that occurs when dough is left in the refrigerator for several days.

## Pastry Dough: Unsweetened

Unsweetened pastry dough has a range of uses and can be used for both savory and sweet applications. Depending on the filling, it may be better to have a not too sweet crust, even for a filling which has a noticeable level of sweetness. For example, to pair a *pate sucee* tart crust with a lemon curd filling would make a very different flavor than if the curd were in a *pate a foncer* crust. The balance of sweetness, tenderness, flakiness and crispness is an important consideration in the creation of desserts and pastries.

The selection of unsweetened pastry dough covered in this article includes *pie dough*, *pate brise* and *pate a foncer*. The two doughs with the greatest difference between them are pie dough and *pate a foncer*. *Pate brise* is slightly more enriched than *pate a foncer* and pie dough and is commonly used for savory applications.

Pie dough is mixed using the *pie dough method* which is similar to the *sanding method* used in cookie mixing and the butter scone process. The method of mixing for *pate brisee* and *pate a foncer* can be either the *creaming method* or *sablér method*. Both create dough that is generally stronger and easier to roll out into large pieces, and has a crisp texture. Whatever type of dough is being used, it is required to rest for a minimum of four hours before working. This will help to minimize shrinkage and ensure that the fats are cold and will not melt as easily into the dough.

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# SFBI 2007-

<b>Artisan I: Baking Fundamentals</b>	<b>Artisan II: Mastering Sourdough</b>	<b>Advanced Artisan Breads</b>
<p>2007 Remaining Schedule: December 3 - December 7</p> <p>2008 Schedule: January 14 - January 18 February 4 - February 8 March 3 - March 7 March 31 - April 4 May 5 - May 9 July 14 - July 18 August 11 - August 15 September 8 - September 12 October 13 - October 17 November 3 - November 7 December 8 - December 12</p>	<p>2007 Remaining Schedule: December 10 - December 14</p> <p>2008 Schedule: January 21 - January 25 February 11 - February 15 March 10 - March 14 April 7 - April 11 May 12 - May 16 July 21 - July 25 August 18 - August 22 September 15 - September 19 October 20 - October 24 November 10 - November 14</p>	<p>2008 Schedule: July 28 - August 1</p> <p><i>with Guest Instructor, Didier Rosada</i></p>

As a student in Artisan I, you will become familiar with the terms short mix, improved mix and intensive mix while learning what types of flour you should be using and the proper mixing techniques for every bread imaginable. You will gain an understanding of the relationship between mixing and fermentation; learn how you can completely change the profile of bread by adding an additional ingredient; acquire overall knowledge about the most common preferments used in bakeries today and much more. We use the classic Baguette to teach the fundamentals, but you will also learn to make Rye Bread, Whole Wheat Bread, Multigrain Bread, Pan Bread and Braided Egg Bread. The skills you learn in this class are directly applicable for a position in a professional bakery or for a serious home baker. This class, limited to 15 to allow for personal instruction, fills up quickly, so reserve your spot early. **Be sure to consider the dates for our Artisan II workshop, scheduled to allow you two consecutive weeks of intensive training.**

Building on the skills you gained in Artisan I, Artisan II takes you full speed ahead into the world of sourdough bread. To become a truly skilled baker, you must learn how to control sourdough and not let the sourdough control you! Unravel the complex world of wild yeast and bacteria as you learn how to start your own sourdough starter, adjust the feeding schedule to maximize the quality of the bread and take your own version of the starter home. Experiment with different styles of starters and fermentation to achieve the flavors and characteristics you desire. The extensive hands-on portion of this class includes Sourdough Breads made with liquid and stiff starters, Olive Bread, Raisin Bread, Ciabatta with a poolish and many other favorites. On the last day, you will mix a batch of sourdough by hand using the starter you created on the first day of class. If you are serious about becoming a better baker, this is a class that you do not want to miss! We encourage you to take Artisan I before enrolling in Artisan II unless you already have a thorough understanding of baking fundamentals. **Artisan I and Artisan II sell out quickly, so please be sure to register early!**

Advanced Artisan Breads is designed for experienced bakers interested in refining their skills and deepening their overall knowledge to become even better at their craft. During this illuminating workshop for those who love their profession, you will learn about and practice a variety of interesting breads using advanced methods. You will experiment with ways to fit new breads into an existing product line with fresh techniques such as sourdough to make sweet breads and miche using high ash flour and 230% (!) starter. Whole grain breads will be produced using whole grain starters and no white flour. You will work with difficult flours such as rye and spelt. Retarding techniques will be demonstrated with Baguettes and Ciabatta - retarded before shaping, and Whole Wheat - retarded after shaping. Because this more advanced class is not designed for beginning bakers, students need to have taken Artisan I and Artisan II or have extensive experience and a thorough understanding of the baking process, including science and terminology. Experienced bakers will be inspired by the newfound understanding and marketable skills they take away from this seminar!

VISIT US ONLINE AT [WWW.SFBI](http://WWW.SFBI) FOR MORE INFORMATION AND UPDATES

<b>Pastry I: Cake Bases, Creams and Assembly</b>	<b>Pastry II: Exploring Creams, Mousses and Glazes</b>	<b>Pastry III: Advanced Cakes and Pastries</b>
<p>2008 Schedule: March 3 - March 7 June 9 - June 13</p>	<p>2008 Schedule: March 10 - March 14 June 16 - June 20</p>	<p>2008 Schedule: June 23-27</p>

In this introductory class, students will learn the formulas, techniques and processes that are the foundation on which both modern and classic desserts are built. Through lecture, demonstration and hands-on participation, you will learn about ingredient functionality, cake mixing methods, pastry doughs and batters, creams and icing preparation, and layer cake assembly. Students will make a variety of base products such as Angel Food Cake, Chiffon Cake, Genoise, Devil's Food Cake, Japonais and Paté a Choux. The cake and pastry bases will then be finished with a variety of creams and icings such as pastry cream, fruit curd, Italian butter cream and fondant. Special emphasis will be placed on learning the procedures for making cake and pastry bases, proper creams and icing preparation and assembling and icing layer cakes. Some of the finished products will include Chocolate Hazelnut Cake, Lemon Curd Cake, Black Forest Cake, Napoleon Cake, Éclairs and Paris-Brest.

In Pastry II students will explore in-depth the techniques and processes that make up the desserts and pastries which are found in many of today's pastry shops. Cake mixing will continue with sponge cakes including Roulade (Jelly Roll) and Almond Sponge Cake. These versatile cakes will be used to finish several of the desserts using Crème Anglaise, Pastry Cream, Diplomat Cream, Bavarian Cream, Mousseline Cream and Cremeux. In addition, students will also learn the fundamental principles for creating light fruit mousse cakes and rich chocolate mousse cakes. Several mediums for finishing cakes such as Italian butter cream, various chocolate glazes, ganache, fruit glazes, mirror glazes and marzipan will also be implemented. Some of the final products produced in Pastry II include Opera Cake, Baba Savarin, Cremeux Tarts, Bavarian Cakes, Fraisier Cake, Charlotte Russe, as well as Fruit and Chocolate Mousse Cakes.

This class is designed for professionals in the industry or students who have completed Pastry I and Pastry II and are interested in learning more about product composition, advanced mousse preparation, chocolate and advanced finishing techniques. Students will learn how to add flavor and flair to their products by creating infused creams, frozen inserts, textured cake bases and seasonal fruit preparations that can complement the natural flavors and textures of any dessert. Expanding on the formulas and processes learned in Pastry I and Pastry II, students will produce dessert offerings that reflect today's pastry trends. Special emphasis will be placed on understanding the balance between flavor, texture and visual elements to create eye catching and flavorful desserts. Through demonstration and hands-on participation, students will learn how to temper and work with chocolate in order to create sophisticated garnishes to highlight any pastry or dessert.

# 2008 COURSES

Fundamentals of Pastry	Baking with a Wood Fired Oven (Four a Bois)	Holiday Pastries
<p>2008 Schedule: February 4 - February 8 May 5 - May 9 November 3 - November 7</p>	<p>2008 Schedule May 19 - May 23 August 4 - August 8</p>	<p>2008 Schedule: October 20 - October 24</p>
<p>Learn the fundamental formulas and processes for creating today's most popular and appealing pastries as we cover the mixing and baking of a number of products—from quick breads, to cookies, to puff pastry. Students will learn to make Financiers, Madeleines, Muffins, Pound Cake, an assortment of Cookies, Brownies, Pies, Coffee Cakes and more. Savory items will also be explored as a way to build a diverse product line by using a few base pastry formulas such as Pate a Choux and Puff Pastry. The main focal points of this class are the understanding of ingredient functions and the mixing, handling and baking guidelines for the pastry doughs and batters covered. Students will obtain the knowledge and skill necessary to produce, manipulate and troubleshoot a wide variety of baked goods.</p>	<p>Don't miss this rare chance to experience baking the way it was done in days past! You will learn about the large selection of products that are well-suited to being baked in a wood fired oven, including breads and sweet and savory items such as pizza and rustic tarts. Instruction will also include the fundamentals of designing and building a wood-fired oven. Most of this class will be hands-on, but some products will be demonstration only. <b>Please note:</b> <i>Due to the size limitations of the wood fired oven, a sampling of each product will be baked in the wood-fired oven; the remainder will be baked in the gas fired deck oven.</i></p>	<p>Holidays are steeped in tradition and associated with warm memories. The pastries and desserts we identify with are modern day reminders of a forgotten art. In this class, you will finally learn the time honored secrets and techniques for producing an array of holiday breads, cookies, cakes and tarts that are rich in culture, tradition and flavor. A wide variety of specialty items will be covered, including Stollen, Pannetone, Buche de Noel, Holiday Mousse Cakes and seasonal cookies, pies and tarts. Through lecture, demonstration and hands-on participation, students will learn the formulas and processes for a wide variety of items. Discover why these beautiful desserts and pastries are holiday favorites and introduce your customers or family to a wealth of traditional and exciting flavors.</p>

## 2008 Bread and Pastry Professional Training: May 28 - October 1

Viennoiserie (Breakfast Pastry)	Whole Grain Breads and Specialty Flours	New! Breads of the World
<p>2007 Remaining Schedule: December 3 - December 7</p> <p>2008 Schedule February 11 - February 15 December 8 - December 12</p>	<p>2008 Schedule February 18 - February 22</p> <p><i>with Guest Instructor, Didier Rosada</i></p>	<p>2008 Schedule: April 28 - May 2 August 25 - August 29</p> <p><i>with Guest Instructor, Didier Rosada</i></p>
<p>Viennoiserie is the term used to describe sweet yeasted dough—laminated or non-laminated. The interest in laminated dough such as Croissant, Danish and Brioche is rising considerably and the quality of Viennoiserie in America is finally starting to catch up to the quality of well-crafted artisan breads. Through lecture, demonstration and hands-on production, students will learn about ingredient functions, dough mixing technology, laminating technology, the preparation of fillings and make-up and baking processes. Students will learn to add visual appeal to their pastries using glazes, fresh fruits, nuts and highlights of powdered sugar. Serious bakers and pastry enthusiasts alike will gain knowledge about various fermentation techniques as a way to accommodate production, build flavor and add shelf-life. Non-laminated dough will include items such as Pan d' Oro, Pannetone, Stollen and Brioche.</p>	<p>During this intensive, hands-on workshop, students will learn how to bake with whole grains and specialty flours. Technical characteristics of specialty flours such as buckwheat, spelt, and semolina will be covered, along with precautions to take when using them. A variety of breads will be baked each day, including Flax Seed Bread and Pear-Buckwheat Bread. Students will learn how to consistently work with whole grain breads in a bakery environment to satisfy the growing customer demand for these products. The class will discover whole grain yeast preferments and how to work with sprouted wheat. In addition, each student will build a sourdough culture using whole grain flours to be used in final dough by the end of the week. Beginners and experienced bakers alike will be inspired as they learn an array of new breads and different shapes.</p>	<p>Discover the unique flavors of breads that are baked around the world during this adventurous class with Guest Instructor Didier Rosada. Didier will guide the class on a tour of interesting products from a variety of countries, including Germany's heavy Heidebrot Bread; coconut-filled Filipino Bread; pineapple-flavored Hawaiian bread, and Mexican Conchas. Sweet or crusty, sourdough or yeast-leavened, these international breads adapt well to a production environment and will be a great complement to your existing products.</p>

## how to register

- Register online at [www.sfbi.com](http://www.sfbi.com) or call 650.589.5784 to register over the phone.
- Tuition for all classes is \$980; tuition includes daily lunch. Sign up for 2 classes within a 12 month period and receive a 10% discount on the second class: total price is \$1,862.
- A 50% deposit is required to reserve your space in class payable by check, cash or credit card (MasterCard, VISA, American Express). The remaining amount is due on the first day of class.

## quick class facts

- All courses run from Monday-Friday.
- Courses begin at 8:30am on Monday and 8:00am for the rest of the week. Classes end at approximately 4:00pm each day.
- Acceptable attire is a white chef's coat or white shirt and checked pants. Hat optional. Wear comfortable non-skid shoes.
- Bring a notebook, writing utensils and a calculator to class.
- As a courtesy to our instructors and fellow students, mobile phones must be shut off or left on "vibrate" mode during class.

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## Pie Dough

There are two types of pie dough commonly made: *mealy and flaky*.

The type of pie dough is determined by the degree to which the fat has been incorporated into the flour. In order to create pie dough that is both tender and flaky, it is necessary to use the proper types of ingredients, which include *flour, fat and water*. Additional basic ingredients can include *salt, sugar and an acidic liquid such as lemon juice*.

The protein content in *pastry flour* creates a fine balance of strength and tenderness that makes it the standard choice for pie crust. *Bread flour*, with its higher protein content, produces a tough crust that is hard to roll out thinly. Conversely, *cake flour* will not provide enough strength to hold its shape throughout the baking process, and may be too fragile when rolling out. If a whole wheat crust is desired, *whole wheat pastry flour* creates a nice, wholesome crust. If no whole wheat pastry flour is available, it is possible to substitute 25 percent of the flour weight with whole wheat bread flour.

Manufactured fats and natural hard fats are most commonly used in pie dough; however, some formulations do call for *fluid vegetable oil*. Manufactured fats include all varieties of shortening and margarine, while natural fats include butter and lard.

Water is an essential ingredient for pie dough, because it binds together the starches and proteins to form dough that has strength. The average ratio of water to flour is 20 to 30 percent.

Sugar, an optional ingredient in pie dough, is generally used in sweet pies at a low percentage of about 5 to 8 percent, based on the flour weight.



When the proper mixing technique is used, successful pie dough is usually the result.

A small addition of sugar to the dough will make the crust a little more tender, and will also help to promote browning.

## Mealy Pie Dough

Mealy pie dough is created when the fat is mixed in until the flour/fat mixture resembles coarse cornmeal.

Because the hard fat coats a large portion of the flour, it repels moisture and ensures a crisper crust for longer periods of time. This property is essential for pies with wet fillings such as *fruits, creams and chiffons*. Mealy pie dough is very versatile, and may be used for both tops and bottoms of pies.

## Flaky Pie Dough

Flaky pie dough is used for drier fillings and top crusts. The flour and fat are mixed until the fat is the size of hazelnuts, leaving large fat particles that create a flaky texture once rolled out. In flaky pie dough, more water is needed to hydrate the starch and protein. Flaky pie dough can be used for unbaked pies with wet fillings if the blind-baked crust is coated with a thin layer of chocolate or cocoa butter to help resist moisture damage.

## Mixing Pie Dough

When the proper mixing technique is used, successful pie dough is usually the result. Pie dough can be mixed by hand or machine with good results, but care must be taken to prevent over-mixing the dough when a machine is used.

The important stages of mixing are cutting in the fat and adding water to the fat/flour mixture. It is essential that the fat be cold for cutting in. If it is too warm, it will be absorbed into the flour. The amount of water required depends on the degree to which the fat is mixed into the flour. To produce a flakier crust, larger pieces of fat are required and more water is needed to hydrate the available protein and starch. For mealy dough, less water is used because more of the protein and starch have been coated with fat. If the dough is too wet or too dry, it will be difficult to work with and quality will be compromised.

## Mixing by Hand

- In a bowl, combine the flour, salt and sugar and mix to combine.
- Dice the cold butter into one-inch cubes and toss in the flour mixture.
- With a bowl scraper or bench knife, cut the butter into the flour mixture until the desired consistency is reached (coarse meal for mealy, walnut-sized for flaky.) This may be done on a table or counter.
- Add the water and lemon juice (if using), reserving some, and mix until dough forms.
- Add more liquid if needed.
- Transfer the dough to a parchment-lined sheet pan and cover with plastic.
- Place in refrigerator for at least four hours before using.

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# welcome our new assistant instructor

## Miyuki Togi Joins SFBI as Assistant Baking and Pastry Instructor



Miyuki Togi  
Assistant Baking & Pastry  
Instructor

Miyuki Togi graduated from *Johnson & Wales University* in Providence, Rhode Island with a Bachelor's degree in Culinary Arts and an Associate degree in Baking and Pastry Arts. For completion of her Bachelor's degree, she took an intensive culinary art course at *DCT Swiss Hotel Management School* in Switzerland. Throughout her school years, Miyuki staged at restaurants in Providence, Rhode Island and Boston, Massachusetts. During this time, her interest slowly shifted from cooking to baking, and she decided to pursue the baking profession upon completion of her study.

Miyuki came to the San Francisco Baking Institute to gain further understanding of artisan baking, starting an internship in 2006. During the six month internship, she assisted instructors, and contributed to demonstrations and special events held at SFBI. She also developed pastry formulas for consultation, taught pastry classes and private lessons on *viennoiserie*, and accommodated students from Japan by interpreting during artisan bread classes.

*We are happy to welcome Miyuki Togi to the SFBI team!*



Miyuki Togi and intern Kate Good in front of Miyuki's Windmill—10', 10", made of all live dough.

## baker's tip: ideal mousse cake volume

When making mousse cakes and using the freezer for production and storage, a common problem is that the fats in the mousse contract and the volume of the mousse slightly decreases. This leaves a slight indentation in the top of the cake. If a glaze is applied to the cake, it causes an excessively thick layer and higher food cost.

A solution to this problem is to build the cake upside down. However, this is not always an option or an ideal method of assembly. Another and easier option is to make slightly more mousse than is needed and to reserve it until after the cake is frozen.

Next, the reserved mousse is applied atop the frozen, contracted mousse and leveled with a pallet knife. By applying the cold mousse to the assembled cake, air is knocked out of the mousse and a slightly more dense layer is created which will not contract.

—Brian Wood  
Baking & Pastry Instructor



# introduction to pastry dough, cont.

continued from page 8

## Mixing by Machine

- In the bowl of a mixer fitted with the paddle attachment, combine the flour, salt and sugar.
- Dice the cold butter into one-inch cubes and toss them in the flour mixture.
- Mix on a medium speed until the desired consistency is reached (coarse meal for mealy, hazelnut-sized for flaky).
- Add the water and lemon juice (if using), reserving some, and mix until dough forms.
- Add more liquid if needed.
- Transfer the dough to a parchment-lined sheet pan and cover with plastic.
- Place in refrigerator for at least four hours before using.

## Pâte a Foncer

*Pâte a foncer*, which translates as *lining pastry*, is used primarily for lining molds for pies and tarts. According to *Traite de Patisserie Moderne*, there are five classic variations which include *pate a foncer fine*, *pate a foncer ordinaire*, *pate a foncer commune*, *pate a foncer pour entremets* and *pate a foncer levee ordinaire pour tarts, flans*. *Pate a Foncer* can have little to no sugar in it, and can be used for sweet and savory applications. While the basic formulation mirrors that of pie dough, the main difference is that it is processed using butter at room temperature instead of cold.

## Pate Brisee

*Pate brisee* is a dough similar to pie dough and *pate a foncer* but typically always has egg in it. Because pastry is such a dynamic field, and many like to make their own variations, formulas tend to vary significantly from source to source—*pate brisee* is a good example of this. Some varieties may use bread flour, others pastry flour. Some may contain sugar, others not. However, according to *Traite de Patisserie Moderne*, a “bible” for pastry terminology, *pate brisee* should not contain sugar. Some may contain water, others egg, some just yolk. Knowing the properties of the ingredients, and their co-affect on

One of the first steps for successful pie dough is to make sure the temperature of the ingredients is correct.

## Precautions for Mixing

One of the first steps for successful pie dough is to make sure the temperature of the ingredients is correct. Both the fat and liquid should be cold. The next precaution is to mix the fat into the flour mixture to the proper degree. Insufficient mixing will require that you add more water to the dough, resulting in a crust that may absorb too much liquid. On the other hand, if the flour/fat phase is over-mixed and the dough cannot be properly hydrated, there will not be enough strength and the dough may shrink excessively during baking.

Finally, the proper amount of water in pie dough is critical. If there is enough water in the dough, over-mixing can overwork and strengthen the gluten, resulting in a tough crust. If there is not enough water, the dough may be dry, crumbly and difficult to work with.

This produces a finer crumb as the butter disperses more easily throughout the dough.

Depending on the quantity of sugar in the dough, as well as the quality of the flour being used, it may be beneficial to use bread or pastry flour in *pate a foncer*. With higher quantities of sugar, the higher protein content of bread flour will add strength to the dough, making it easier to work with. This dough can be enriched with sugar (up to 25 percent of FW), an increase in butter (up to 25 percent more based on FW) and egg may replace water at (15-20% based on FW). Like all rolled, cut dough, *pate a foncer* should rest for a minimum of four hours before use to ensure the butter is well chilled and the gluten has relaxed.

the dough as a whole, is important in understanding the mixing, baking, shelf life and eating qualities.

## Conclusion

Unsweetened pastry dough is a versatile group of dough, some of which are very similar, and they can be used for both savory and sweet applications. The choices of ingredients, as for any item, as well as the mixing processes, are very important to follow. For all pastry dough, it is necessary to allow it to rest at least four hours to ensure it is well chilled and then to be sure the gluten is well relaxed. Once rolled out and used, it is important to cut out the dough efficiently to minimize waste. Any scrap dough should be added to the next sheeting, and when possible, it is best to pre-portion dough to prevent waste. Scrap pieces should not exceed 15 percent of the new dough weight.

—Brian Wood  
Baking & Pastry Instructor

# recipe of the season: apple pie

## Components

- Mealy and Flaky Pie Dough
- Apple Filling

Yield: 5, 9"  
double-crusted pies



## Apple Filling

Ingredients	Baker's %	Kilogram	U.S. decimal	Lbs	Oz
Apples* peeled, sliced	100.00	3.578	7.888	7	14 1/4
Lemon Juice	1.46	0.052	0.115	0	1 7/8
Sugar	20.00	0.716	1.578	1	9 1/4
Cornstarch	2.40	0.086	0.189	0	3
Salt	0.15	0.005	0.012	0	1/4
Cinnamon	0.15	0.005	0.012	0	1/4
Nutmeg	0.05	0.002	0.004	0	1/8
Vanilla Bean, scraped	~	1	1	1 each	
Raisins, soaked	6.10	0.218	0.481	0	7 3/4
Butter	2.44	0.087	0.192	0	3 1/8
Total	132.75	4.750	10.471	10	7 1/2

## Mise en Place

- Soak the raisins (in water or rum.)
- Roll out both pieces of pie dough for the bottom and top crust. Line pie pans with the bottom crust.
- Reserve bottom and top crusts in the refrigerator until the filling is prepared.

## Process

- Peel, core and slice the apples (Granny Smith or any other firm, tart apple.)
- Combine the apple slices and lemon juice in a large mixing bowl.
- Mix together the starch, sugar, salt, vanilla and spices. Add to the apples and toss until mixed.
- Fold in the drained, soaked raisins.

## Assembly and Baking

- Fill the pie shells. Dot the top of the filling with the butter. Create vent in top dough and secure to the bottom dough with a decorative border.
- Brush with egg wash or cream and sprinkle with granulated sugar.
- Bake at 196°C/385°F convection for about 40-45 minutes. Lower the temperature if the pie begins browning too early.
- Once baked, the filling should be boiling in the center to ensure proper thickening.

"Good apple pies are a considerable part of our domestic happiness."

Jane Austen





Savor the season with a classic Apple Pie recipe, inside this issue ...

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- recipe of the season
- baker's tip
- welcome our new assistant instructor
- 2008 course schedule, and more!