

**Title:** Beginning Brewing  
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**Introduction:** This class will teach you:  
what are the basic steps in brewing beer,  
what equipment you need to brew a 5 gallon batch of beer,  
what preparation is needed prior to brewing,  
how to brew the beer,

This class may also cover the following as lecture or in a following class as hands on:  
how to bottle the beer,  
how to document.  
other discussion topics.

**What are the basic steps in brewing beer:**

Preparation - gather equipment and ingredients, sanitize brewing equipment.  
Brew - by mixing and heating the ingredients.  
Fermentation - place brew in primary fermentation vessel and put in brew yeast, allowing to ferment for up to 72 hours. Place brew in secondary fermentation vessel for up to a week for settling.  
Bottle and let age.  
Enjoy.

**What equipment is needed to brew a 5 gallon batch of beer:**

Bleach or other sanitizer  
Carboy brush  
6 gallon food-grade fermentation bucket  
5 gallon glass carboy  
2 fermentation locks  
Small sauce pan  
Small stainless steel spoon  
Hydrometer?  
3-5 gallon Stainless steel kettle  
Long-handled stainless steel spoon  
Carboy cap  
Stopper for fermentation lock, fermentation bucket  
Food grade funnel  
50-60 non-screw cap brown beer bottles  
Matching number of new bottle caps  
Bottle capper

Brew kit (ingredients)  
5 gallons of water  
See appendix A for a list of when the equipment is needed.

### **Preparation**

The first step in preparation is to decide you want to brew. The second step is to decide what type of beer you want to brew. You will then need to gather the equipment and ingredients.

As this is a beginning brewing class, I suggest you identify a beer you like, go to a brew shop and by a beer kit for that type of beer that includes all the ingredients except the water. See appendix B for local suppliers of ingredients and equipment.

Once everything is gathered you can now brew.

The first step in brewing is Sterilization of all the equipment for the brewing stage. One of the things that can make a good beer go bad is poor sanitation; this can cause wild yeast to take over from the brew yeast meaning that you're much less likely to get a good beer. The first secret of brewing is sterilize, sterilize, sterilize.

#### **Step 1**

Do the below procedures for step 2 items in appendix A.

Sterilization consists of:

Wash all equipment with hot soapy water.

Rinse all equipment with hot bleach water or other sterilization solution.

Rinse all equipment with hot water.

Do the above sterilization procedures for each item marked with a process of sterilization in appendix A during the appropriate step.

#### **Brew**

##### **Step 2**

This brewing step consists of mixing the ingredients from your kit and boiling the ingredients.

Follow the Brewing instructions from your kit.

*Example* brewing directions are below:

In a sauce pan put in some water and heat to a slow boil.

Remove the labels from the cans of malt extract, wash the cans, open the cans and place them in the sauce pan.

Place the 6 gallon stainless steel kettle on the stove.

Place 1 ½ to 2 gallons of the purchased water into the kettle.

Bring the water to a boil in the kettle, then turn off the heat.

Place the grains in the steeping bag, and steep in hot water for 20-30 minutes. Then remove and discard the spent grains, and heat the water again to near boiling.

Turn the heat off (on an electric stove, temporarily remove from burner). While stirring the water with a long-handled spoon, slowly pour both cans of extract into the pot. Stir until materials dissolve, then return to heat and bring to a boil. Note: When it first boils, the mixture will foam. Reduce heat, or remove from burner and foam will subside. Turn heat back on, and repeat process until foaming stops. Add approximately ½ the package of hop pellets and stir them in, and then boil for 30 minutes, adding the rest of the op pellets for the final 1-2 minutes of the boil.

Place the 3-3 ½ gallons of cold water in your fermenting vessel, and slowly pour the hot mixture into the vessel. Fill with additional cold water as necessary to bring volume up to 5 gallons.

## **Fermentation**

### **Step 3**

This fermentation step consists of two separate sub-steps, primary fermentation step 3 of appendix A and secondary fermentation step 5 of appendix A. This is where you allow the brewers yeast to do its work.

Primary fermentation – step 3 of appendix A

Primary fermentation takes about 24 hours to start and will last for up to 72 hours of active to very active bubbling.

Follow the fermentation instructions from your brew kit.

*Example* fermentation instructions are below:

Allow the warm mixture (it's now unfermented beer, called wort) to cool if necessary, until it's under 90 degrees F. If you wish to take a hydrometer reading for beginning specific gravity, do so now before introducing yeast.

Sprinkle the yeast over the top of the mixture. Wait 10 minutes and stir the yeast gently into the wort with 1 or 2 strokes of the spoon.

Taking the airlock in one hand, and the lid of the fermenter in the other, gently twist the airlock tip into the hole of the lid. Place the lid on the fermenter, and push down hard until the lid is tight. Finally, fill the airlock half full of water (I suggest something like whiskey, since it won't mold) and place its cap on top.

Over the next 24 hours fermentation should begin, and you'll see bubbling through the airlock. Fermentation should continue for 48-72 hours and then cease as settling begins.

### **Step 4**

Sterilize the equipment for step 5 appendix A.

### **Step 5**

Move the beer from the primary fermenter to the carboy using the spigot on the primary fermenter and the funnel.

Place the carboy fermentation cap on the carboy

Insert the fermentation lock in the cap, add water (I suggest whiskey) in the fermentation lock and then place the fermentation lock cap on.

Allow the beer to settle for 3-4 days after fermentation ceases (no more bubbles in the airlock). Generally, you'll be ready to bottle a week after beginning fermentation.

## **Bottle**

### **Step 6**

Sterilize the equipment for step 7 appendix A.

### **Step 7**

#### **Bottle**

Follow the bottling instructions from your brew kit.

#### *Example* bottling instructions:

In a small saucepan, heat 1 cup of water and the priming sugar. Mix until dissolved and bring to boil, then remove from heat.

Place the full fermenter on a counter with the bottling bucket on the floor or a chair at a lower level.

If you choose, take a hydrometer reading for final gravity now.

Fill the siphon with water, and place the rigid end with the racking tip midway between top and bottom of the beer. Lower the flexible end and beer should begin to flow.

When beer begins flowing into the bottling bucket, gently pour the warm sugar mixture from the saucepan into the bottling bucket. Movement of the beer into the bucket should mix the sugar thoroughly.

Stop the siphon before it begins picking up sediment from the bottom of the fermenter.

Raise the bottling bucket to chair or counter level.

Place each bottle under the bottling bucket spigot and fill with beer up to 1/4 to 1/2 from top.

Cap bottles, and rinse off outside as necessary.

Clean all equipment prior to storage.

Place beer in cool, dark area for a week to condition. It can then be moved to a refrigerator for further aging, or left in the same cool dark area. Aging should continue for another 3 weeks.

#### **Other Discussion topics:**

Documentation

Hydrometer

Resources for bottles

## Appendix A

The below listed equipment is used in brewing and bottling a 5 gallon batch of beer.

Step	Equipment	Process
1	Bleach or other sanitizer	Sterilization
1	Scrubber	Sterilization
1	Kettle at least 3 gallon	Sterilization
1	Long-handled stainless-steel spoon	Sterilization
1	Small stainless-steel spoon	Sterilization
1	Small sauce pan	Sterilization
1	Fermentation bucket 6 gallon	Sterilization
1	Beer bucket fermentation lock	Sterilization
1	Hydrometer with jar	Sterilization
2	Kettle at least 3 gallon	Brew
2	Long-handled stainless-steel spoon	Brew
2	Small stainless-steel spoon	Brew
2	Small sauce pan	Brew
3	Fermentation bucket 6 gallon	Fermentation
3	Beer bucket fermentation lock	Fermentation
3	Hydrometer with jar	Fermentation
4	Bleach or other sanitizer	Sterilization
4	Carboy brush	Sterilization
4	Glass carboy 5 gallon	Sterilization
4	Carboy fermentation cap	Sterilization
4	Fermentation lock	Sterilization
4	Food grade funnel	Sterilization
4	4 feet of 3/8" I.D. food-grade tubing	Sterilization
4	Racking tube	Sterilization
5	Glass carboy 5 gal	Fermentation
5	Carboy fermentation cap	Fermentation
5	Fermentation lock	Fermentation
5	4 feet of 3/8" I.D. food-grade tubing	Fermentation
5	Racking tube	Fermentation
6	Bleach or other sanitizer	Sterilization
6	Bottle brush	Sterilization
6	50-60 brown non-screw cap beer bottles	Sterilization
6	Fermentation bucket 6 gallon	Sterilization

6	Hydrometer with jar	Sterilization
7	50-60 brown non-screw cap beer bottles	Bottling
7	New bottle caps to match the number of beer bottles	Bottling
7	Fermentation bucket 6 gallon	Bottling
7	Hydrometer with jar	Bottling
7	Bottle capper	Bottling

## Appendix B

### Ingredient Suppliers

**Cornhusker Beverage and Bridal** –  
8510 K St. Omaha, NE (402) 331-5404  
[www.cornhuskerbeverage.com/](http://www.cornhuskerbeverage.com/)

**Fermenters Supply & Equipment**  
8410 K Plaza Suite # 10, **Omaha NE** 68127 (402) 593-9171 (84th & J street, BEHIND - Just Good Meat.  
[www.fermenterssupply.com/](http://www.fermenterssupply.com/)

Local grocer (water)

### Equipment suppliers

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## Appendix C

### Bibliography

The Brewer's Companion, by Randy Mosher, H.B, 1994.  
Trew Brew Beer Ingredient Kit, Red Ale.

### Additional Suggested Reading

Calontir Brewer's Guild list <http://www.geocities.com/calontirbrewersguild/>