Food and Catering Study

Food is any material consisting essentially of protein, carbohydrate, and fat used in the body of an organism to sustain growth, repair, and vital processes and to furnish energy.

Food studies is the critical examination of food and its contexts within science, art, history, society, and other fields. It is distinctive from other food-related areas of study such as nutrition, agriculture, gastronomy , and culinary arts in that it tends to look beyond the mere consumption, production, and aesthetic appreciation of food and tries to illuminate food as it relates to a vast number of academic fields.

Importance of Food and Catering Study to a Tourism and Events Management Professional

1. Career Opportunities

As a professional in the tourism field, taking a course in food and catering studies opens up more job opportunities for you.

1. Travel Opportunities

The food industry is global, and many large companies conduct business in several other countries. Depending on your position, it’s likely you will get to travel, often paid for by your company or agency.

1. The food industry falls under Tourism and Hospitality industry so taking a course in it can give you an advantage over you peers.
2. Food is also a major part of the industry. Eg, there is no Tourism destination that you go to that is without food and there are a few services in the Tourism industry that come without food.

Heating Techniques

What is Heat Transfer?

Heat transfer is an exchange of thermal energy between two objects. The rate of heat transfer depends upon the temperatures of each entity and the medium through which the thermal energy is being transferred. In cooking, heat transfer refers to heating your food items through a cooking appliance, such as a stove, fryer, microwave, or oven.

How is Heat Transfer Used in Cooking?

Heat transfer is a very important aspect of the cooking process. Heating food destroys potentially harmful bacteria and other microorganisms, which makes food safe to eat and easier to digest. When food or liquids become hot, their molecules absorb energy, begin vibrating rapidly, and start to bounce off of each other. As they collide, heat energy is produced and transferred, which warms and cooks our food.

3 Types of Heat Transfer

Conduction

Convection

Radiation

Each of these three methods of heat transfer features its own unique characteristics, but there is some crossover between the different types.

What is Conduction?

Conduction is the process of heat being transferred between objects through direct contact, and it's the most common type of heat transfer. For example, in cooking the burners on stoves will conduct heat energy to the bottom of a pan sitting on top of it. From there, the pan conducts heat to its contents.

A deep fryer also uses conduction heating as the hot oil cooks the food when it comes into direct contact with it. Additionally, conduction heat is responsible for moving heat from the outside of the food to the inside. As a result, conduction heat also happens when cooking with convection and radiation heating methods.

Conduction is the slowest method of heat transfer, but the direct contact between the cooking surface and the item to be heated allows food to be cooked from the outside in. When [cooking a steak in a cast iron skillet](https://www.webstaurantstore.com/article/182/how-to-cook-steak-in-a-cast-iron-skillet.html), for example, conduction produces an evenly cooked exterior and a moist, juicy interior that guests are sure to love.

Examples of Conduction Cooking

Here are a few examples conduction heating:

Burning your hand on a hot piece of metal

Grilling steak, chicken breasts, or pork chops

Using ice water to blanch vegetables after steaming to keep them from losing their color

What is Convection?

Convection combines conduction heat transfer and circulation to force molecules in the air to move from warmer areas to cooler ones. As the molecules closest to the heat source become warm, they rise and are replaced by cooler molecules. There are two types of convection that are based on the movement of the heated molecules.

Natural Convection

Natural convection occurs when molecules at the bottom of a cooking vessel rise and warm while cooler and heavier molecules sink. This creates a circulating current that evenly distributes heat throughout the the substance being prepared.

For example, when a pot of water is placed on the stove to boil, conduction heat warms up the pot, which then heats the water molecules inside. As these molecules heat, convection causes them to move away from the interior of the pot as they are replaced by cooler molecules. This continuous current creates convection heat transfer within the water.

Mechanical Convection

Mechanical convection occurs when outside forces circulate heat, which shortens cooking times and cooks food more evenly. Examples of this include stirring liquid in a pot or when a [convection oven](https://www.webstaurantstore.com/14181/commercial-convection-ovens.html) uses a fan and exhaust system to blow hot air over and around the food before venting it back out.

Examples of Convection Cooking

Here are a few examples of how heat transfer via convection works:

Water coming to a boil and circulating in the pot

Running cold water over frozen food, which transfers heat into the food to thaw it more quickly

Room temperature air moving around frozen food to thaw it

What is Radiation Cooking?

In cooking, radiation is the process where heat and light waves strike and penetrate your food. As such, there is no direct contact between the heat source and the cooking food. There are two main radiant heat cooking methods: infrared and microwave radiation.

Infrared Radiation

Infrared radiation utilizes an electric or ceramic heating element that gives off electromagnetic energy waves. These waves travel in any direction at the speed of light to quickly heat food, and are mainly absorbed at the surface of whatever you're preparing. Examples of things that create infrared radiation are glowing coals in a fire, toaster ovens, and broilers.

Microwave Radiation

Microwave radiation utilizes short, high-frequency waves that penetrate food, which agitates its water molecules to create friction and transfer heat. If you're heating a solid substance, this heat energy is transferred throughout the food through conduction, while liquids do so through convection.

Microwave heat transfer usually cooks food faster than infrared radiation, as it is able to penetrate foods several inches deep. Keep in mind that microwave radiation works best when cooking small batches of food.

Examples of Radiation Cooking

Here are a few examples of how heat transfer via radiation works:

Warming your hands over a fire

Lying in the sun to get warm

Heating up dinner in the microwave

Whether you're using a pan on a stove, a convection oven, or a heavy-duty microwave, conduction, convection, and radiation are all around us. Knowing and understanding what heat transfer is, how it works, and which type of heat transfer is happening as you cook can help you better understand the science of cooking and improve your skills as a chef.

Food Preservation Techniques

Food processing is a way or technique implemented to convert raw food stuff into well-cooked and well preserved eatables for both the humans and the animals. All these methods are used by food processing industry to give out processed or preserved foods for our daily consumption. Best quality harvested, slaughtered and butchered and clean constituents are used by food processing industry to manufacture very nutritious and easy to cook food products. Following are some techniques and methods used to convert food into processed or preserved food.  
  
Preservation process: this includes heating or boiling to destroy micro-organisms, oxidation, toxic inhibition, dehydration or drying, osmotic inhibition, freezing, a sort of cold pasteurization which destroys pathogens and various combinations of all these methods.  
  
Drying: this is probably the most ancient method used by humans to preserve or process their food. Drying reduces the water content in the product and lack of water delays the bacterial growth very much. Drying is the most common technique to preserve or process cereal grains like wheat, maize, oats, rice, barley, grams and rye etc.  
  
Smoking: many foods such as meat, fish and others are processed, preserved and flavored by the use of smoke mostly in big smoke houses. This process is very simple as the combination of smoke to preserved food without actually cooking it and the aroma of hydro-carbons generated from the smoke processes the food and makes it even tastier to eat.  
  
Freezing: probably, it is the most common technique used in modern world to preserve or process the food both on commercial and domestic basis. This freezing is conducted in big cold storages which can stockpile huge amount of food stuffs which can be further used in some natural emergencies. A very big range of products can be frozen to preserve and process which includes some which do not need freezing when are in their natural condition. For example potato chips and potato wafers requires freezing whereas a potato does not.  
  
Vacuum packs: in this method, food is packed in airtight bags and bottles in a vacuum area. This method is used in processing the food as the air-tight environment doesnâ€™t provide oxygen needed by germs especially bacteria to survive. This then, prevents food from getting rotted. This method is very commonly used for preserving processed nuts.  
  
Salting: the method of salting is used in food processing as it sucks out the moisture from the food. This is done through the process of osmosis. Meat is the best example of the food processed by salting as nitrates are used very frequently to treat meat.  
  
Sugaring: the method of using sugar to preserve or process food is very frequent where it comes to preserve fruits. In this method fruits such as apples, peaches and plums are cooked with sugar until they are crystallized and then it is stored dry. Now days, sugar is also used in combination of alcohol to make some branded alcohol and spirits.  
  
Pickling: in this method of preserving or processing food, food is cooked in chemicals and materials which destroy micro-organisms. This is very strictly kept in mind that these chemicals or materials are fit to eat for humans. Normally, these include brine, vinegar, ethanol, vegetable oil and many other types of oils. Pickling is very commonly seen in vegetables such as cabbage and peppers. Corned beef and eggs are the non vegetarian eatables that are pickled.