

Topics	What will be covered?	Completed
<b>3.2 Food Nutrition and Health, 3.2.1</b> Macronutrients,	3.2.1.1 Protein- function, main source, effect of deficiency and excess, related dietary reference values Low and high biological value proteins (LBV/HBV), protein compensation Protein alternatives edge textured vegetable protein (TVP), soya, mycoprotein and tofu. 3.2.1.2 Fats- function, main source, effect of deficiency and excess, related dietary reference values Saturated, unsaturated, (monounsaturated and polyunsaturated) 3.2.1.3 Carbohydrates - function, source, effect of deficiency and excess, related dietary reference values Starches (polysaccharide) Sugars (monosaccharides) Dietary Fibre	
Food Nutrition and Health, 3.2.2 Micronutrients	3.2.2.1 Vitamins- Fat Soluble- Vitamin A, Vitamin D, Vitamin E, Vitamin K-function, main source, effect of deficiency and excess, related dietary reference values of each vitamin Water Soluble - B Group, B1 (thiamin), B2 (riboflavin), B3(niacin), Folic acid, B12- function, main source, effect of deficiency and excess, related dietary reference values Lose of water soluble vitamins when cooking (B group and Vitamin C) how is preparation and cooking affects the nutritional properties of food. Antioxidants functions of vitamins Vitamin A, C and E - the role antioxidants in protecting body cells in damage.	
Food Nutrition and Health, 3.2.2 Micronutrients	3.2.2.2 Minerals- Calcium, Iron, Sodium, Fluoride, Iodine, Phosphorus -function, main source, effect of deficiency and excess, related dietary reference values 3.2.2.3 Water The importance of hydration and the function of water in diet. Functions of water to eliminate waste from the body, cooling and for digestion. How water is lost from the body. How much water/fluid is needed each day. Occasions when extra fluids are needed.	
Food Nutrition and Health, 3.2.3 nutritional needs and health	3.2.3.1 making informed choices for varied and balanced diet The current guidelines for a healthy diets e.g. Eatwell plate, portion size and costing when meal planning, how people's nutritional needs change and how to plan a balanced diet for different life stages- nutritional needs for the following life stages: young children, teenagers, adults and the elderly. How to plan a balanced meal for a specific dietary groups: vegetarian and vegan, coeliac, lactose intolerant and high fibre diets. How to maintain a healthy body weight throughout life. 3.2.3.2 Energy needs The basal metabolic rate (BMR) and physical activity level (PAL) and their importance in determining energy requirements - factors affect the BMR, such as age, gender and PAL. The importance in achieving energy balance. The recommended percentage of energy intake provided by protein 15% fat 35% and carbohydrates 50% (45% starches, lactose in milk and fruit sugars and 5% free sugars).	
3.2.3.3 How to carry out nutritional analysis	3.2.3.3 How to carry out nutritional analysis How to plan and modify recipes, meals and diets to reflect the nutritional guidelines for a healthy diet- how to use current nutritional information and data e.g. Food tables, nutritional analysis software to calculate energy and nutritional values. 3.2.3.4 The relationship between diet, nutrition and health, how diet can affect health and how nutritional needs change in relation to obesity, cardiovascular health (coronary heart disease (CHD) and high blood pressure) bone health (rivets and osteoporosis) dental health, iron deficiency anaemia, Type 2 diabetes. Major diet related health risks.	
<b>3.3 Food Science</b> 3.3.1 Cooking of food and heat transfer	3.3.1.1 Why food is cooked and how heat is transferred to food The reason why food is cooked, to make food safe, develop flavours, improve texture, improve shelf life, give variety in diet. How cooking affect the appearance, colour, flavour texture, smell and overall palatability of food. The different methods of heat transfer through conduction, convection and radiation. 3.3.1.2 selection of appropriate preparation, cooking methods and times to achieve desired characteristics. How selection of appropriate preparation and cooking methods can conserve or modify nutritive value or improve palatability: water based: steaming, boiling, simmering, blanching, poaching, braising. Dry methods: baking, roasting, grilling, dry frying. Fat based: shallow frying, stir fry. How preparation and cooking affect the appearance, colour, flavour, texture, smell and overall palatability of food eg the use of marinade to denature protein.	
3.3.2 Functional and chemical properties of food.	24.04.18 3.3.2.1 Proteins- denaturation, coagulation, gluten formation, foam formation. The scientific principles underlying these processes when preparing and cooking food. The working characteristics, functional and chemical properties of proteins. 3.3.2.2 carbohydrates -gelatinisation, dextrinisation, caramelisation. The scientific principles underlying these processes when preparing and cooking food. The working characteristics, functional and chemical properties of proteins.	
3.3.2.3 Fats and oils	Shortening, aeration, plasticity, emulsification - The scientific principles underlying these processes when preparing and cooking food. The working characteristics, functional and chemical properties of fats and oils. 3.3.2.4 Fruit and Vegetables Enzymic browning and oxidation - The scientific principles underlying these processes when preparing and cooking food. The working characteristics, functional and chemical properties of proteins. 3.3.2.5 Raising Agents Chemical (baking powder, bicarbonate of soda, self-raising flours which produce carbon dioxide) Mechanical (whisking, beating, folding, sieving, creaming and rubbing in- all incorporate air into the mixture). Steam is produced when water in any moist mixture reaches boiling point. Biological (yeast) The scientific principles underlying these processes when preparing and cooking food. The working characteristics, functional and chemical properties of raising agents.	
<b>3.4 Food Safety</b> 3.4.1 Food Spoilage and contamination,	3.4.1.1 Microorganism and enzymes- The growth conditions for microorganism and enzymes and the control of food spoilage- role of temperature, moisture, food and time. Bacteria, yeast and moulds are microorganism- control of microorganism growth: temperature control, pH, water availability. High risks foods- ready to eat moist foods, usually high in protein that easily support the growth of pathogenic bacteria and do not require any further treatment or cooking. Enzymes are biological catalyst usually made from protein, control of enzyme action: blanching of vegetables before freezing, use of acid to prevent enzymic browning.	

	<p>3.4.1.2 The signs of food spoilage- Enzymic action- ripening of bananas, browning of some fruits. Mould growth- eg on bread and cheese. Recognise the signs of mould growth on foods. Yeast action on fruits eg grapes, strawberries and tomatoes.</p> <p>3.4.1.3 Microorganisms in food production- moulds in the production of blue cheese, yeast to raise bread, bacteria in yoghurt and cheese production.</p>	
<p>3.4.1.4 Bacterial contamination</p> <p>3.4.2.1 Buying and storing food,</p> <p>3.4.2.2 Preparing, cooking and serving food</p>	<p>3.4.1.4 Bacterial contamination- the different source of bacterial contamination, the main types of bacteria which cause food poisoning, the main sources and methods of control of different food poisoning bacterial types, the general symptoms of food poisoning.</p> <p>Contamination from: other contaminated foods including the following raw foods: meat, poultry, eggs, seafood and vegetable, work surfaces and equipment, the people cooking, pest, waste food and rubbish, campylobacter, e-coli, salmonella, listeria, staphylococcus aureus</p> <p>3.4.2.1 Buying and storing food- The food safety principles when buying and storing food. Temperature control: freezing -18c, chilling 0- to below 5c, danger zones 5 to 63c, cooking: 75%, reheating: 75%, ambient storage, temperature danger zone, correct use of domestic fridge and freezer, date, 'best before' and 'use by' date, covering food.</p> <p>3.4.2.2 Preparing, cooking and serving food- The food safety principles when preparing, cooking and serving food. Personal hygiene, clean work surfaces, separate raw and cooked foods and use of spate utensils, correct cooking times, appropriate temperature control including: defrosting and reheating. Appropriate care with high risk foods, correct use of food temperature probes.</p>	
<p><b>3.5 Food Choice</b></p> <p>3.5.1.1 Factors which influence food choice</p>	<p>3.5.1 Factors affecting food choice</p> <p>3.5.1.1 Factors which influence food choice- to know and understand factors which may influence food choice- the following factor in relation to food choice: physical (*Pal) , celebration/occasion, cost of food, preferences, enjoyment , food availability, healthy eating, income, lifestyles, seasonality, time of day, time available to prepare/cook, modification to recipes.</p>	
<p>3.5.1.2 Food Choices</p> <p>3.5.13 Food Labelling</p>	<p>3.5.1.2 Food Choices- Food choice related to religion- Buddhism, Christianity, Hinduism, Islam , Judaism , Rastafarianism and Sikhism culture, ethical and moral beliefs- animal welfare, fairtrade, local produce, organic, Genetically Modified (GM) Foods and medical conditions- food intolerance (gluten and lactose) and food allergies: nuts, eggs, milk, wheat, fish and shellfish.</p> <p>3.5.13 Food Labelling- How information about food available to the consumer, including labelling and marketing influences food choice, mandatory information included on food packing on accordance with current European Union and Food Standards Agency (FSA) legislation.</p> <p>Non Mandatory information: provenance, serving suggestions, how to interpret nutritional labelling, how food marketing can influence food choice eg buy one get one free, special offers, meal deals , media influence, advertising point of sale marketing.</p>	
<p>3.5.2 British and International Cuisine</p>	<p>Food products from British tradition and two different cuisines, schools or colleges/students can select different cuisines to study.</p> <p>Cuisines is defined as ' a style characteristic of particular country or region where the cuisine have developed historically using distinctive ingredients, specific preparation and cooking method or equipment, and presentation or serving techniques'</p> <p>Distinctive features and characteristics of cooking, equipment and cooking methods used, eating, patterns, presentation styles, traditional and modern variation of recipes.</p>	
<p>3.5.3 Sensory Analysis (NEA 2)</p>	<p>Sensory testing methods, how taste receptors and olfactory systems work when tasting food. Importance of senses when making food choices: sight, taste, touch and aroma, preference tests: paired preference, hedonic, Discrimination tests: triangle, grading tests: ranking, rating and profiling, how to set a taste panel, controlled conditions required for sensory testing, evaluating how senses guide, evaluating a wide range of ingredients and food from Britain and other countries, how to test sensory qualities of a wide range of foods and combinations</p>	
<p><b>3.6 Food Provenance</b></p> <p>3.6.1 Environmental impact and sustainability of food</p> <p>3.6.1.1 Food sources</p>	<p>3.6.1.1 Food sources</p> <p>Where and how ingredients are grown, reared and caught- grown ingredients: fruits, vegetables and cereals, reared ingredients: meat and poultry, caught ingredients: fish, an understanding of: organic and conventional farming, free range production, intensive farming, sustainable fishing, advantages and disadvantages of local produced foods, seasonal food and Genetically modified (GM) foods.</p>	
<p>3.6.1.2 Food and the environment</p> <p>3.6.1.3 Sustainability of food</p>	<p>3.6.1.2 Food and the environment- Environmental issues associated with food- Seasonal foods, sustainability eg fish farming, transportation, organic food, the reasons for buying locally produced food, the reasons for buying locally produced food, food waste in home/food reduction/retailers, environment issues related to packaging, carbon footprint</p> <p>3.6.1.3 Sustainability of food- the impact of food and food security on local and global markets and communities- the challenges to provide the world's growing population with a sustainable, secure, supply of safe, nutritious and affordable high-quality food. Students must have an awareness: Climate change, global warming, sustainability of food sources, insufficient land for growing, availability of food, fair trade, problems of drought and flooding, Genetically Modified (GM), food waste.</p>	
<p>3.6.2 Food processing and production</p> <p>3.6.2.1 Food Production</p> <p>Technological developments associated with better health and food production</p>	<p>3.6.2 Food processing and production - 3.6.2.1 Food Production</p> <p>-Primary and secondary stages of processing and production, how processing affects the sensory and nutritional properties of ingredients.- primary processing related to the rearing: fishing, growing, harvesting and cleaning of the raw food material (milling of wheat to flour, heat treatment of milk, milk to cheese and yoghurt, fruit to jams), loss of vitamins through heating and drying, the effect of heating and drying on the sensory characteristics of milk.</p> <p>Technological developments associated with better health and food production- Technological developments to support better health and food production including fortification and modified with health benefits and the efficacy of these., cholesterol lowering spreads, health benefits of fortification, fortified foods: thiamine, niacin, calcium and iron added to white flour, folic acid and iron added to breakfast cereal</p> <p>Vitamin A and D added to fats and low fat spreads, the positive and negative aspects of the use of additives: colouring, emulsifiers and stabilisers, flavourings and preservatives, the positive and negative aspects of Genetically Modified (GM) foods.</p>	