AP PGECET 2025 Food Technology Syllabus

Food Chemistry and Nutrition Syllabus

Food Chemistry	• Carbohydrates: structure and functional properties of mono/ di & lipopolysaccharides including starch/ cellulose/ pectic substances/ dietary fiber • Proteins: Classification & structure of proteins in foods • Lipids: Classification & structure of lipids • Rancidity of fats • Polymerization & polymorphism • Pigments: Carotenoids/ chlorophylls/ anthocyanins/ tannins/ myoglobin • Food flavors: Terpenes/ esters/ ketones/ quinones • Enzymes: Enzymatic and nonenzymatic browning in different foods
Nutrition	• Balanced diet • Essential amino acids and fatty acids • PER • Water-soluble and fat-soluble vitamins • Role of minerals in nutrition • Antinutrients • Nutrition deficiency diseases

Food Microbiology & Biotechnology

Food Microbiology	• Characteristics of microorganisms: morphology/ structure/ detection of bacteria, yeast, and mold in food • Spores and vegetative cells • Microbial growth in food-intrinsic and extrinsic factors • Growth and death kinetics

	• Serial dilution method for quantification • Food spoilage: contributing factors/ spoilage bacteria • Microbial spoilage of milk and milk products • Meat and meat products • Food bone diseases: Toxins produced by staphylococcus/ clostridium/ aspergillus • Bacterial pathogens: Salmonella/ bacillus/ listeria/ escherichia coli/ shigella/ campylobacter
Biotechnology	• Fermented food: Buttermilk/ yoghurt/ cheese/ sausage/ alcoholic beverage/ vinegar/ wine/ beer/ whisky/ sauerkraut/ soya sauce

Food Technology Syllabus

Cereals, Pulses, Oil Seeds	• Composition/ nutritive value/ processing methods/ products of 1. Rice, wheat and maize, barley, oats & minor millets 2. Bengal gram, red gram, green gram, black gram, chickpeas 3. Ground nut, soya bean, sunflower, other oil seeds
Fruits, Vegetables, Plantation Crops	• Extraction/ clarification/ concentration/ packaging of fruit juice • Production of jam, jelly, marmalade, squash, candies, and pickles • Pectin from fruit waste, tea, coffee, chocolate, essential oil from spices
Meat, Fish, Poultry & Milk	• Post-mortem change of meat, freezing, aging, pickling, smoking & tenderization of meat/drying/caning of fish

	• Structure/ composition/ nutritive value and functional properties of eggs & their preservation by different methods • Milk & milk products processing: Milk processing flow sheet, filtration/ clarification/ storage of milk/ standardization: Simple problems in standardization • Homogenization/ pasteurization: type of pasteurization processes • Manufacture of cream, butter, ghee, milk powder, cheese

Food Engineering Syllabus

Fluid Mechanics	• Nature of fluids • Flow properties of fluids • Flow through pipes & fittings • Flow measurement • Transportation of fluids: Pumps/ compressors/ blowers • Heat transfer: heat transfer by conduction/ convection/ radiation/ boiling/ condensation • Steady and unsteady heat transfer • Other unit operations • Size reduction/ homogenization/ filtration/ sedimentation/ centrifugation/sieving/ mixing/ extraction/ crystallization/ evaporation/ drying/ extrusion • Types of equipment used in each unit operation/ their selection • Applications in the food industry

Food Quality and Standards

Food Quality	• Food quality attributes: classification of quality attributes and their role in food quality • Quality assessment of food materials: fruits & vegetables,

	cereals & pulses, dairy products, meat poultry • Eggs and processed food products sensory evaluation of food quality and its methods food adulteration and food safety
Standards	• FSSAI/ PFA Act 1954 and rules 1955-scope • Definition and standards of quality • FPO and MPO - rules • FSMS- 22000:2005 - various elements included in the standard • Introduction to the family of ISO 22000 standards • Comparison of ISO 9001: 2008 vs ISO 22000: 2005 • FSSAI • HACCP - terminology/ principles/ identification of CCPs, applications of HACCP system, the logic sequence involved