GURUPADA SAREN  
SECRETARY  
COUNCILS FOR UNDERGRADUATE STUDIES,  
UNIVERSITY OF CALCUTTA.  

Ref.No : CUS/ 146/18  
Dated the 28th March, 2018  

To  
The Principals/T.I.C.  
of all the Undergraduate Colleges  
offering B.Sc. (Honours & General) in Food & Nutrition  
affiliated to the University of Calcutta  

Sir/Madam,  
The undersigned is to inform you that the proposed revised semester wise draft Syllabus for Food & Nutrition (General) Courses of Studies under CBCS has been uploaded in the Calcutta University website (www.caluniv.ac.in).  
The said syllabus has been prepared by the U.G. Board of Studies in Food & Nutrition, C.U.,  
You are requested kindly to go through it and send your feedback within 13th April, 2018.  
In this regard you may send your observation/suggestion to the Department of U.G. Councils, C.U. or through email (u.g.councilisc.u@gmail.com), and you also may contact Prof. Santa Dutta (De), Department of Home Science, C.U. through e-mail (drsantade@yahoo.co.in).  
Your cooperation in this regard will be highly appreciated. Kindly treat the matter as urgent.  
Thanking you,  

Yours faithfully,  

[Signature]  
Secretary
COURSE CURRICULUM FOR UNDERGRADUATE COURSES UNDER CHOICE BASED CREDIT SYSTEM

PROPOSED DRAFT SYLLABUS

FOR

BSc. (GENERAL)
IN
FOOD AND NUTRITION

UNIVERSITY OF CALCUTTA

2018
## Scheme and Syllabus for Choice Based Credit System for B.Sc. General Food and Nutrition

<table>
<thead>
<tr>
<th>Course</th>
<th>Core Course (CC)</th>
<th>Ability Enhancement Compulsory Course (AECC)</th>
<th>Skill Enhancement Course (SEC)</th>
<th>Discipline Specific Elective (DSE)</th>
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### DISTRIBUTION OF CREDITS IN THE COURSE CURRICULUM

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<th>Semester</th>
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<td>VI</td>
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<tr>
<td>Total credits</td>
<td>CC (12x6=72)</td>
<td>AECC (2x2=4)</td>
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**NOTE:**

1. 12 papers for Core Courses (CCs) from 03 Disciplines of Choice (DSC) should be compulsorily studied for BSc. General students. 4 courses from each of the DSC subjects are to be studied by the BSc General students.
2. The CC or DSC is equivalent to Generic Elective (GE) for BSc. (Honours) students of other discipline.

3. 6 DSE & 1/2 SEC to be chosen by the Food and Nutrition(General) students (Choice based).

4. GE subjects in Food and Nutrition Syllabus are to be studied by other discipline students.

**GENERIC ELECTIVE (GE)**

**CC-1AT: ELEMENTARY CHEMISTRY**

1. Law of conservation of mass, chemical and physical changes, Mechanical mixtures and chemical compounds


5. Diffusion and Osmosis, Osmotic pressure, Isotonic solution, Definition and examples.

6. Colloids: Definition, Types of colloidal systems, Important properties of colloidal sols, Dialysis.


8. Chemistry of carbon compounds: Classification of organic compounds based on structural characteristics and functional groups, isomerism, Concept of optical
isomerism. General methods of preparation, properties and reactions of structured and unstructured hydrocarbons, Aliphatic monohydric alcohols, Glycerol, Aldehyde, Ketones and fatty acids upto 3 atoms with nomenclature.

CC-1AP: ELEMENTARY CHEMISTRY (PRACTICAL) 2 CREDITS

1. Fitting of simple apparatus, experiment involving solution, filtration, distillation, and crystallization. Separation of constituents of mixture.
3. Simple chemical tests for carbohydrate- Starch, glucose, cane sugar, lactose, and dextrin.
4. Qualitative tests-Protein in milk and egg, Calcium, phosphorus, and iron in foodstuff.

CC-1BT: ELEMENTARY PHYSICS 4 CREDITS

1. Units –C.G.S. and F.P.S. system
3. Motion of body – displacement, velocity, acceleration units.
5. Hydrostatics–Pressure at a point, Archimedes Principles, Specific gravity, viscosity and surface tension.
6. Thermometry.
7. Calorimetry.
9. Three types of matter, changes of state, pressure cooker, Ice-machine.
10. Static electricity – Changing by friction, conductor and Insulator.
11. Primary cell, storage cell.
12. Electroplating.
16. Refrigerator, cold storage.
17. Electric fuse.

CC-1BP: ELEMENTARY PHYSICS (PRACTICAL) 2 CREDITS

1. Use of balance( Weighing a body)
2. Determination of specific gravity of a solid (heavier and insoluble in water).
3. Determination of specific gravity of a liquid by hydrostatic balance.
4. Determination of specific gravity of a liquid by specific gravity bottle.
5. Reading of barometer.
6. Determination of lower and upper fixed point of a thermometer.
7. Fitting of electric fuses.

**CC-1CT: ELEMENTARY PHYSIOLOGY**


2. Tissue: Definition, structure and functions of different types of tissue, e.g. epithelial, connective, nervous and muscular tissue (special emphasis on blood and bone).

3. Digestive system: Structure involve in digestive system (mouth, oesophagus, stomach, small intestine, large intestine, liver, pancreas, gall bladder) and their functions. Digestion and absorption of Carbohydrate, protein and fat.

4. Elementary idea of metabolism, enzymes and hormones- name and their important functions. Metabolism in brief (Glycolysis, Glycogenesis, Gluconeogenesis, Cori’s cycle, Kreb’s cycle, Deamination, Transamination. Role of hormones in carbohydrate metabolism.

**CC-1CP: ELEMENTARY PHYSIOLOGY (PRACTICAL)**

1. Demonstration for determination of blood pressure of humans being- (a) systolic and b) diastolic.
2. Identification of slides (Blood cells, Stomach, Small intestine, large intestine, Liver, pancreas).
3. Determination of Bleeding Time (BT) and Clotting Time (CT).
4. Detection of Blood group.

**CC-1DT: BASIC NUTRITION AND FOOD SCIENCE**

4 CREDITS

2. Carbohydrate, Protein, Fat, Vitamins and Minerals (calcium, phosphorus, sodium, potassium, iron, iodine, fluorine)- sources, classification, functions, deficiencies of these nutrients. Functions of water and dietary fiber.


4. Basic five food groups: Nutritional significance of cereals, pulses, milk, meat, fish, vegetable, egg, nuts, oils, sugar.


CC-1DP: BASIC NUTRITION AND FOOD SCIENCE (PRACTICAL) 2 CREDITS

1. Elementary idea of weight and measure.
2. Preparation of cereals, pulses, vegetable, egg, milk, fish, nuts.
3. Demonstration of jam, jelly, squash, pickles.
4. Planning and preparation of diet often adult male/female Modification of diet during pregnancy and lactation.

DISCIPLINE SPECIFIC ELECTIVE (DSE) COURSES
DSE1T: COMMUNITY NUTRITION  
1. Concept and types of Community. Concept of community nutrition.


3. Elementary idea of health agencies - FAO, WHO, ICMR, ICDS, ICAR, CSIR, ANP, VHAI, NIN and CFTRI. Role of voluntary health organisation in the improvement of Community health.

4. Nutritional Intervention programmes to combat malnutrition. Concept of food fortification and food enrichment.


DSE1P: COMMUNITY NUTRITION (PRACTICAL)  
1. Preparation of homemade ORS.
2. Preparation of weaning foods for infants.
3. Preparation of low cost and medium cost school tiffin.
4. Diet survey by 24 hours recall method.

DSE2T: PUBLIC HEALTH  


4. General idea about the contamination of food (Chemical and microbial)-Sources and transmission, Elementary ideas about food toxins, aflatoxin & food toxicology with reference to Lead, Cadmium & Zinc.

5. Contamination of water and prevention of contamination, different methods of water purification, water –borne diseases, elementary idea of microbiology of water-borne
pathogens, diarrhoea, dysentery, typhoid, hepatitis, preventive measures and dietary management of such diseases.

**DSE2P: PUBLIC HEALTH (PRACTICAL) 2 CREDITS**

1. Calculation of BMI of an individual and interpretation of result.
2. Growth charts - plotting of growth charts for growth monitoring.
3. Formulation and demonstration of nutrition education tools such as charts, posters, models related to health and nutrition education.

**DSE3T: CLINICAL NUTRITION 4 CREDITS**

1. Definition of Dietetics, dietitian, Goals of Diet Therapy.
3. Obesity and underweight: Causes, risk factors, dietary and general management of overweight and underweight.
4. Diarrhoea, Constipation and Jaundice: Causes, symptoms and dietary management.
5. Anaemia: Definition, causes, classification, and dietary management of Nutritional anaemia.
6. Hypertension, Atherosclerosis and Diabetes mellitus: Definition, Causes, Types, risk factors, Signs, Symptoms and dietary Management.
7. Fever: Definition, causes, types, symptoms and dietary management.

**DSE3T: CLINICAL NUTRITION (PRACTICAL) 2 CREDITS**

1. Planning and preparation of Therapeutic Diets for the following diseases:
DSE4T: FOOD SAFETY AND QUALITY CONTROL

1. The relationship of microorganisms to sanitation, Effects of microorganisms on food degradation and food-borne illnesses.

2. Importance of personal hygiene of food handlers: Habits, clothes, illness, education of food handler in handling and serving food. Concept of food contamination.

3. Food Safety: Definition and factors affecting food safety, safety of left over foods. Control of Food spoilage.


5. Food Laws and Standards:
   i) Codex Alimentarius
   ii) Prevention of Food Adulteration (PFA) Act
   iii) Agmark
   iv) Fruit Products Order (FPO)
   v) Meat Products Order (MPO)
   vi) Bureau of Indian Standards (BIS)
   vii) Food Standards and Safety Authority of India (FSSAI)

DSE4T: FOOD SAFETY AND QUALITY CONTROL (PRACTICAL)

1. Detection of common adulterant in food:
   i) Khesari flour in besan
   ii) Vanaspati in Ghee/Butter.
   iii) Dried papaya seeds in black pepper
   iv) Metanil yellow in turmeric or coloured sweet products.
   v) Artificially foreign matter in tea (dust/leaves).
SKILL ENHANCEMENT COURSE(SEC)

SEC1P: FOOD PRESERVATION  2 CREDITS

1. Elementary idea on food preservation: principles and different methods – drying, freezing, frying, canning etc.

2. Visit to food preservation centre/ industry and demonstration of preparation and packaging of jam, jelly, chilli sauce, tomato ketchup, squash, pickles etc.

SEC2T: NUTRITION AND FITNESS  2 CREDITS

1. Understanding Fitness: Definition of fitness, health and related terms. Assessment of fitness, Approaches for keeping fit.

2. Importance and benefits of physical activity: Physical Activity – frequency, intensity, time and type with examples Physical Activity, physical activity guidelines and physical activity pyramid.

3. Importance of nutrition Role of nutrition in fitness, Nutritional guidelines for health and fitness, Nutritional supplements.

4. Importance of diet and exercise for weight management.

REFERENCE BOOKS FOR FOOD AND NUTRITION GENERAL COURSE

CHEMISTRY AND PHYSICS


**PHYSIOLOGY:**


**BASIC NUTRITION AND FOOD SCIENCE**


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COMMUNITY NUTRITION AND PUBLIC HEALTH


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CLINICAL NUTRITION

FOOD SAFETY AND QUALITY CONTROL


Please add more references for this paper.

FOOD PRESERVATION


Please add more references for this paper.

NUTRITION AND FITNESS


5.