IDHAYA COLLEGE FOR WOMEN

(Accredited with 'B' Grade by NAAC)

(Recognized Under Section 2(f) & 12(B) of the UGC ACT 1956)

(Affiliated to Alagappa University, Karaikudi)

Arockia Nagar, Sarugani, Sivagangai Dt. - 630 411.

Department of Biochemistry

Programme: Bio Chemistry

PO No.	**Programme Outcomes Upon completion of the B.Sc. Degree Programme, the graduate will be able**
PO-1	To explore new research areas in Biochemistry as well as allied fields of science. To appreciate the central role of Biochemistry in our society.
PO-2	To learn the safe handling of samples and instruments.
PO-3	To expose different analysis and techniques used in hospitals and industries.
PO-4	To create and provide the numerous job opportunities through Biochemistry field.
PO-5	An ability to critically analyze scientific data, draw objective conclusions and apply this knowledge for human welfare.

*Use words that show the outcomes will be fulfilled following the completion of the Programme.

PSO No.	**Programme Specific Outcomes Upon completion of these courses the student would**
PSO – 1	An ability to properly understand the technical aspects of existing technologies that help in addressing the biological and medical challenges faced by humankind.
PSO – 2	An ability to translate knowledge of Biochemistry to address environmental, intellectual, societal and ethical issues through case studies presented in the class.
PSO – 3	Promoting lifelong learning to meet the ever evolving

	professional demands by developing ethical, inter personal and team skills.
PSO – 4	Students should be able to demonstrate expertise and ethical perspective on areas related to Biochemistry.
PSO – 5	An ability to acquire in-depth theoretical and practical knowledge of Biochemistry and the ability to apply the acquired knowledge to provide cost efficient solutions in Biochemistry.

Course Outcome

Course (UG)	Outcomes
BIOMOLECULES	To know about the structure & composition of bimolecular of life and its metabolic functions.
CELL BIOLOGY	To know about the size, shape and function of the cell organelles. To know about the various metabolism of cell.
ANALYTICAL BIOCHEMISTRY	To learn the equipment handling skills as follows: - Centrifuge - Chromatography - Spectroscopy - UV-chamber - Electrophoresis - Blotting techniques To apply the techniques in diagnosis of diseases.
INTERMEDIATORY METABOLISM	• To learn about the various metabolic conversion of food in living organisms. • To know about the metabolic defects and to identify the cause of disease.
ENZYMOLOGY	• To know about the enzymes and its uses. • To apply the enzymes in industrial production.
HUMAN PHYSIOLOGY	• To know about the anatomy of human body. • To learn about the functions of various endocrine systems and elite organs present in our body

MOLECULAR BIOLOGY & GENETICS	• To know about the modern genetic information. • To learn about the cause of hereditary disease • To understand the advanced molecular techniques and its applications
MICROBIOLOGY & IMMUNOLOGY	• To know about the various ki9nd of micro biota. • To learn about the cultivation of microbes and its application in food.
CLINICAL BIOCHEMISTRY	• To know about the disease, diagnosis, prophylaxis and precautions • To know about the symptoms of various diseases • To understand the human immune systems and immunotheraphy
PLANT BIOCHEMISTRY	• To learn about the various plant growth hormones. • To learn the various metabolic pathways in plants.
BIOTECHNOLOGY	To apply the various techniques in industries. - Fermentor - Gene cloning Production and application of organic solvents, vitamins and monoclonal antibodies.
NUTRITIONAL BIOCHEMISTRY	• To know about the nutritive value of the food. • To know the composition of food. • To learn the nutritional disorders. • To learn the balanced diet formulation.
MINIPROJECT	• To improve the student's practical knowledge. • To gain the knowledge through field work and industrial visit. • To develop the student's skill on writing and interpretation of results. • To provide hand on training on the operation of scientific instruments.

UG COURSE (PRACTICALS)	
ANALYTICAL BIOCHEMISTRY	To analyse various biomolecules, - Carbohydrates - Lipids - Amino acids Biochemical preparation.
BIOCHEMISTRY TECHNIQUES	To estimate the Biomolecules using - DNSA method - Lowry's method - Zak's method - Orcinol method - Drabkin's method To Determine - Acid number - Saponification number - Total activity of salivary amylase - Total activity of alkaline phosphatase.
MICROBIOLOGY & IMMUNOLOGY	To separate the blood & serum To estimate the qualitative analysis of urine
CLINICAL BIOCHEMISTRY	To learn about the media preparation. To learn about the ABO blood grouping. To learn the biochemical reactions in bacteria
COURSE (PG)	**OUTCOME**
CHEMISTRY OF BIOMOLECULES	To learn about the chemical composition and structure of the food. To study about the types of bond present in the food. To know the structure and functions of food substance.
ANALYTICAL	To learn about the different types of separation techniques. To

BIOCHEMISTRY	learn the equipment handling skills as follows: - Centrifuge - Chromatography - Spectroscopy - UV-chamber - Electrophoresis - Blotting techniques To know the application of various separation techniques. To apply the techniques in diagnosis of metabolic disorders.
ENZYME TECHNOLOGY	To learn about the enzymes and it's uses. To know about the modern enzyme purification techniques. - Immobilization - Biosensor To learn about the enzyme kinetics.
PLANT BIOCHEMISTRY	To know about the structure and functions of plant. To learn about the plant nutrition &it's nutritive value. To learn the types of plant growth hormones & it's regulation
FOOD TECHNOLOGY	To evaluate the various microorganisms present in the spoiled food. To learn about the various food preservation methods - High temperature - Freezing - Drying - Salting - Canning - Chemicals - Radiations such as UV. To detect the illness and hazards caused by food.
CELL BIOLOGY	To learn about the structure & functions of cell. To learn about the cell structure - Chromosomes - DNA

	To know about the various signalling pathways.
MICROBIOLOGY & IMMUNOLOGY	To study about the morphology & classification of microorganisms present in various sources. To learn about the clinical aspects of immunology. To know about the cells & organs of immune system.
BIOTECHNOLOGY	To learn about the various scientific techniques - Cloning - Gene therapy - Blotting techniques - Fermentor - PCR To apply the various techniques in research of commercial & industrial importance.
BIOPROCESSTECHNOLOGY	To provide hands on training on the handling fermentor/ bioreactor. To learn about the various industrial productions such as - Antibiotics - Vitamins - Hormones - Enzyme - Biofuels
MOLECULAR GENETICS	To learn about the structure, organization & types of various gene. - DNA - RNA - Protein To know about the process involved in gene transfer - Replication - Transcription - Translation - Recombination - Mapping To evaluate the gene defects by using,

	- Pedigree analysis - Sex determination - Genetic counseling - Karyotyping
GENE EXPRESSION & METABOLIC REGULATION	To learn about the various metabolic regulation, - Carbohydrates - Amino acids - Fatty acids - Nucleic acids To know about the mechanism & action of hormones. To learn about the metabolic regulation of various genes, - Operons - Chaperons - Oncogene - Agonist & antagonist
MEDICAL BIOCHEMISTRY	To learn the basics & scope of Biochemistry. To study about the various disorders. To learn about the various metabolic regulation, - Carbohydrates - Lipids - Proteins - Nucleic acids To evaluate the various clinical test.

MOLECULAR BIOLOGY	To know about the modern genetic information.
	To learn about the cause of hereditary disease.
	To learn about the structure, organization & types of various gene.
	  - DNA
	  - RNA
	  - Protein
	To know about the process involved in gene transfer

	○ Replication ○ Transcription ○ Translation ○ Recombination ○ Mapping To learn about the developmental genetics.
BIOPHARMACEUTICALS	To learn about the drug designing & modeling. To know about the drug metabolism. To learn about the production & application of pharmaceutical products ○ Antibiotics ○ Probiotics ○ Vitamins ○ Microbes To learn about the pharmaceutical products using DNA technology ○ Insulin ○ HGH ○ Erythropoitin
HORMONES&CELL SIGNALLING	To learn about the classification of hormones. To study about the clinical importance of hormones signal transduction.
MAJOR PROJECT	To improve the student's practical knowledge. To gain knowledge through field work and industrial visit. To develop the student's reference skill and the language skill. To execute the student's equipment handling skills
PG COURSE (PRACTICALS)	
BIOCHEMICAL ANALYSIS	To Estimate the biomolecules from various food grains. To learn about the enzyme kinetics.
MICROBIOLOGY& IMMUNOLOGY	To learn about the antigen-antibody reactions. To learn about the biochemical analysis of microbes

CLINICAL BIOCHEMISTRY & MOLECULAR BIOLOGY	To Estimate the following blood constituents - Blood sugar& urea - Serum calcium & iron To learn the techniques involved in nucleic acids