

BACHELOR OF SCIENCE (BIOCHEMISTRY)

PROGRAMME OUTCOMES (PO)

After completion of the programme, the graduates will be able to

PO 1: Apply the knowledge of science in the domain of Biochemistry.

PO 2: Solve the complex problems in the field of Biochemistry with an understanding of the societal, legal and cultural impacts of the solution.

PO 3: Identify and solve problems and explore new areas of research in life science.

PO 4: Undertake higher studies in recognized Institutions of higher learning and engage in self-employment.

PO 5: Acquire the necessary theoretical and practical competencies in Biochemistry.

PROGRAMME SPECIFIC OUTCOMES (PSO)

After completion of the programme, the graduates will be able to

PSO 1: Implicate the concepts of biological components which are needed for optimum functioning of the cells and the entire system.

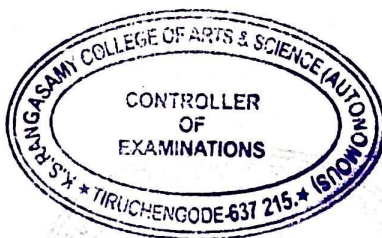
PSO 2: Demonstrate biological techniques to compile and evaluate the experimental results

PSO 3: Appraise the changes in the structure and metabolism of the biomolecules leads to abnormalities.

PSO 4: Carry out basic research in Biochemistry including medical and diagnostic fields.

PSO 5: Form a part of member in a team with right attitude and find gainful employment in industry or government sectors.

PRINCIPAL
K. S. Rangasamy College of Arts & Science
(Autonomous)
TIRUCHENGODE - 637 215
Namakkal-Dt. Tamil Nadu, INDIA.



Mr. M. PRASAD, M.Sc., M.B.A.,
Controller of Examinations
K.S. Rangasamy College of Arts & Science (Autonomous)
Tiruchengode - 637 215, Tamilnadu, India.

COURSE OUTCOMES (CO)

After completion of the course, the students will be able to

18UBCM101	CORE I: BIOMOLECULES
CO1	Illustrate the structure and chemical reactions of Monosaccharides.
CO2	Discriminate the complex structure of Oligosaccharides, Polysaccharides and their functions.
CO3	Describe about the nature of amino acids and their interactions in the formation of proteins.
CO4	Characterize the structure and properties of lipids.
CO5	Explain of the basics of nucleic acids and their significance.

MAPPING

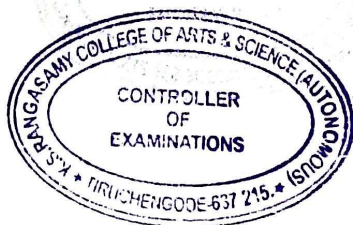
PO,PSO CO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	M	L	L	L	M	H	L	M	H	M
CO2	M	L	L	L	M	H	L	M	H	M
CO3	M	L	L	L	M	H	L	M	H	M
CO4	M	L	L	L	M	H	L	M	H	M
CO5	M	L	L	L	M	H	L	M	H	M

H-High; M-Medium; L-Low

18UBCMP101	CORE PRACTICAL I: BIOMOLECULES
CO1	Perform qualitative analysis for identification of Biomolecules
CO2	Apply the techniques used for isolation of bioconstituents from food samples
CO3	Do quantification of biomolecules by titrimetric methods

18UBCM201	CORE II: BIOCHEMICAL TECHNIQUES
CO1	Sort out the procedure of electrochemical techniques for measurement of pH
CO2	Apply the principle of centrifuge for application in biomedical field
CO3	Explore the types and employ the applications of chromatographic techniques
CO4	Demonstrate the use of electrophoretic techniques in macromolecule separation
CO5	Validate the techniques for measuring the concentration of suspended particles

PRINCIPAL
K. S. Rangasamy College of Arts & Science
(Autonomous)
TIRUCHENGODE - 637 215
Namakkal-Dt, Tamil Nadu.



Mr. M. PRASAD, M.Sc., M.B.A., M.Phil.
Controller of Examinations
K.S. Rangasamy College of Arts & Science (Autonomous)
Tiruchengode - 637 215, Tamilnadu, India.

MAPPING

PO,PSO CO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	H	L	M	L	M	L	H	H	H	M
CO2	H	L	M	L	M	L	H	H	H	H
CO3	H	L	M	L	M	L	H	M	H	H
CO4	H	L	M	L	M	L	H	M	H	H
CO5	H	L	M	L	M	L	H	M	H	H

H-High; M-Medium; L-Low


18UBCMP201	CORE PRACTICAL II: BIOCHEMICAL TECHNIQUES
CO1	Operate and handle basic biochemical instruments
CO2	Apply the techniques in identification of Biomolecules
CO3	Perform separation procedure

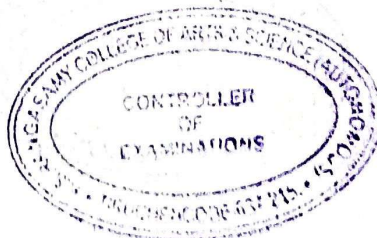
18UBCM301	CORE III: ENZYMOLOGY
CO1	Describe the various systems for classifying the enzymes
CO2	Apply appropriate methods for determination of catalytic parameters and activity of enzymes and resolve problems considering kinetics and thermodynamics of enzymatic reactions
CO3	Characterize the structure and functions of coenzymes, and the mechanism of enzyme catalysis
CO4	Explain the regulatory mechanisms of enzyme activity which involve in the maintenance of body's homeostasis
CO5	Use appropriate enzymes for use in industries for recognizing their potential

MAPPING

PO,PSO CO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	H	L	L	L	M	H	L	L	M	L
CO2	H	L	L	L	M	H	H	M	H	H
CO3	H	L	L	L	M	H	M	M	M	L
CO4	H	L	M	L	H	H	L	M	H	M
CO5	H	H	H	H	H	H	M	L	H	H

H-High; M-Medium; L-Low


K.S. Rangasamy PRINCIPAL
 K.S. Rangasamy College of Arts & Science
 (Autonomous)
 TIRUCHENGODE - 637 215
 Namakkal-Dt. Tamil Nadu, INDIA.




M. PRASAD, M.Sc., M.B.A.
 Controller of Examinations
 K.S. Rangasamy College of Arts & Science (Autonomous)
 Tiruchengode - 637 215, Tamilnadu, India.

18UBCMP301	CORE PRACTICAL III: ENZYMOLOGY
CO1	Outline the general methods in enzyme extraction and purification process
CO2	Analyze the effect of various biological parameters on enzyme activity
CO3	Perform enzyme immobilization methods

18UBCSB301	SBC I: CELL BIOLOGY
CO1	Explain the purposes of basic components of prokaryotic and eukaryotic cells and their involvement in cell cycle
CO2	Recognize the use of cellular components in generating and utilizing energy in cells
CO3	Identify the cellular components that are involved in protein synthesis
CO4	Describe the basic mechanisms involved in transport of biomolecules through biological membranes
CO5	Apply their knowledge of cancer biology to selected examples of changes or losses in cell function especially during responses to environmental or physiological changes, or alterations of cell function

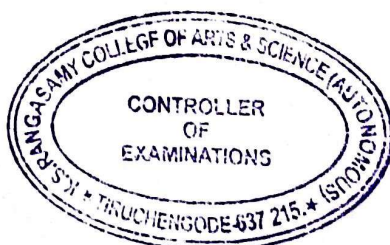
MAPPING


PO,PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	H	L	L	L	M	H	L	L	M	L
CO2	H	L	L	L	M	H	L	L	M	L
CO3	H	L	L	L	M	H	L	L	M	L
CO4	H	L	L	L	M	H	L	L	H	M
CO5	H	L	L	L	M	H	L	H	H	H

H-High; M-Medium; L-Low

18UBCM401	CORE IV: BIOENERGETICS AND INTERMEDIARY METABOLISM
CO1	Demonstrate the principle and mechanism of working of various energy transfer reactions in living system.
CO2	Correlate the pathways of carbohydrate metabolism.
CO3	Explain the synthesis and utilization of lipids in living organisms.
CO4	Appraise the anabolic and catabolic reactions of amino acids.
CO5	Discriminate the synthesis and degradation of the nucleic acids.


PRINCIPAL
K. S. Rangasamy College of Arts & Science
(Autonomous)
TIRUCHENGODE - 637 215
Namakkal-Dt. Tamil Nadu, INDIA.




Mr. M. PRASAD, M.Sc., M.B.A., M.Phil.
Controller of Examinations
K.S. Rangasamy College of Arts & Science (Autonomous)
Tiruchengode - 637 215, Tamil Nadu, India.

MAPPING

PO,PSO CO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	H	L	M	M	H	L	L	H	H	H
CO2	H	L	M	M	H	L	L	H	H	H
CO3	H	L	M	M	H	L	L	H	H	H
CO4	H	L	M	M	H	L	L	H	H	H
CO5	H	L	M	M	H	L	L	H	H	H

H-High; M-Medium; L-Low

18UBCMP401	CORE PRACTICAL IV: INTERMEDIARY METABOLISM
CO1	Demonstrate the basic principles in estimation of intermediary metabolites produced in metabolic pathways

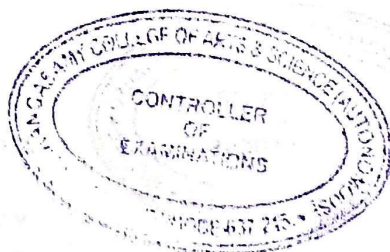
18UBCSB401	SBC II: FUNDAMENTALS OF BIOCHEMICAL CALCULATIONS (100% INTERNAL EVALUATION)
CO1	Prepare solutions and buffers for performing laboratory experiments
CO2	Calculate and find out the optimum concentrations of solutes to be mixed for preparing a solution
CO3	Explain the concept of absorbance and half-life of solutes in a living system
CO4	Interpret the calculated results
CO5	Perform laboratory experiments and research works with high accuracy


MAPPING

PO,PSO CO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	H	L	L	L	M	L	M	L	H	H
CO2	H	L	L	L	M	L	M	L	H	H
CO3	H	L	L	L	M	L	M	L	H	H
CO4	H	L	L	L	M	L	M	M	H	H
CO5	H	L	L	L	M	L	M	M	H	H

H-High; M-Medium; L-Low


PRINCIPAL
K. S. Rangasamy College of Arts & Science
 (Autonomous)
TIRUCHENGODE
 Tamil Nadu, India




Mr. M. PRASAD, M.Sc., M.B.A.,
 Controller of Examinations
K.S. Rangasamy College of Arts & Science (Autonomous)
Tiruchengode - 637 215, Tamil Nadu, India

18UBCM501	CORE V: FUNDAMENTALS OF IMMUNOLOGY
CO1	Describe the structure and functions of cells of immune system
CO2	Illustrate the properties and types of antigen and antibodies
CO3	Interpret the basics in antigen and antibody reaction
CO4	Explain about the complement system and hypersensitivity reactions
CO5	Clarify about the immune diseases and vaccination

MAPPING										
PO,PSO CO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	H	M	M	M	H	H	H	H	H	M
CO2	H	M	M	M	H	H	H	M	H	H
CO3	H	M	M	M	H	H	H	M	H	H
CO4	H	M	M	M	H	H	H	H	H	H
CO5	H	M	M	M	H	H	H	H	H	H

H-High; M-Medium; L-Low

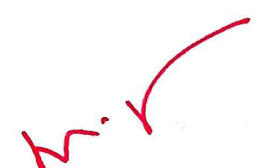
18UBCM502	CORE VI: MOLECULAR BIOLOGY
CO1	Illustrate the structural organization of genome
CO2	Demonstrate the mechanism of replication process
CO3	Describe the transcription process and their inhibitors
CO4	Explain about the synthesis of proteins and regulatory mechanism
CO5	Elucidate the molecular basis of mutation and repair mechanism

MAPPING										
PO,PSO CO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	H	M	H	H	H	H	M	H	M	H
CO2	H	M	H	H	H	H	M	H	H	H
CO3	H	M	H	H	H	M	H	M	H	H
CO4	H	M	H	H	H	H	H	M	H	H
CO5	H	M	H	H	H	H	H	H	H	H

H-High; M-Medium; L-Low


PRINCIPAL
K. S. Rangasamy College of Arts & Science
(Autonomous)
TIRUCHENGODE - 637 215
Namakkal-Dt. Tamil Nadu. INDIA.




Mr. M. PRASAD, M.Sc., M.B.A., M.Phil.
Controller of Examinations.
K.S. Rangasamy College of Arts & Science (Autonomous)
Tiruchengode - 637 215, Tamil Nadu, India.

18UBCM503	CORE VII: CLINICAL BIOCHEMISTRY
CO1	Set up a clinical laboratory and explain the disorders of carbohydrate metabolism
CO2	Infer the inborn errors of amino acid metabolism
CO3	Interpret the disorders of lipid and nucleic acid metabolism
CO4	Perform the collection & analysis of gastric contents and liver function tests
CO5	Elucidate the disorders of kidney and kidney function tests

MAPPING										
PO,PSO CO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	M	M	H	H	H	M	M	H	H	H
CO2	M	M	H	H	H	M	M	M	H	M
CO3	M	M	H	H	H	M	M	H	H	H
CO4	M	M	H	H	H	M	H	H	H	H
CO5	M	M	H	H	H	M	H	H	H	H

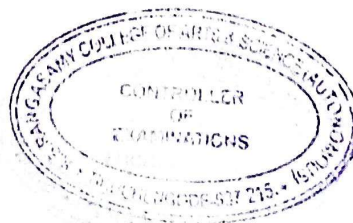
H-High; M-Medium; L-Low

18UBCM504	CORE VIII: ENDOCRINOLOGY
CO1	Illustrate the mechanism of action of hormones of hypothalamus and pituitary gland
CO2	Point out the physiological role and pathophysiology of thyroid hormones
CO3	Elucidate the chemistry, secretion & biological function of pancreatic hormones
CO4	Enumerate the chemistry & synthesis of medullary hormones and catecholamine
CO5	Detail the role of reproductive hormones and their disorders

MAPPING										
PO,PSO CO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	M	L	L	H	H	H	L	H	H	M
CO2	M	L	L	H	H	H	L	H	H	M
CO3	M	L	L	H	H	H	L	H	H	M
CO4	M	L	L	H	H	H	L	H	H	M
CO5	M	L	L	H	H	H	L	H	H	M

H-High; M-Medium; L-Low

PRINCIPAL
K. S. Rangasamy College of Arts & Science
(Autonomous)
Tiruchengode - 637 215
Tamil Nadu.



Mr. M. PRASAD, M.Sc., M.B.A., M.Phil.,
Controller of Examinations
K. S. Rangasamy College of Arts & Science (Autonomous)
Tiruchengode - 637 215, Tamil Nadu, India.

18UBCEL501	ELECTIVE I: HUMAN PHYSIOLOGY
CO1	Clarify the physiological functions of blood and organization of cardiac system
CO2	Explain the physiology of respiratory and muscular system
CO3	Interpret the structure and functions of digestive & excretory systems
CO4	Infer organization of nervous system & the functioning of special senses
CO5	Elucidate the Functional anatomy of the human reproductive system

MAPPING										
PO,PSO CO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	M	L	M	M	H	H	L	H	H	M
CO2	M	L	M	M	H	H	L	H	H	M
CO3	M	L	M	M	H	H	L	H	H	M
CO4	M	L	M	M	H	H	L	H	H	M
CO5	M	L	M	M	H	H	L	H	H	M

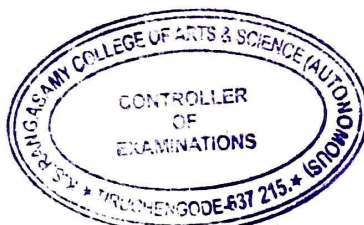
H-High; M-Medium; L-Low

18UBCEL502	ELECTIVE I: NUTRITIONAL BIOCHEMISTRY
CO1	Simplify the role of nutrition in maintaining proper health and energy measurements
CO2	Deduce the classification, functions, deficiencies and over consumption of carbohydrates, lipids and proteins
CO3	Infer the classification, dietary sources and deficiencies of vitamins
CO4	Describe the nutritional disorders and the importance of human milk
CO5	Elaborate on the effects of drug on food and the role of diet in prevention and treatment of diseases

MAPPING										
PO,PSO CO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	H	L	M	M	M	H	L	M	M	H
CO2	H	L	M	M	M	H	M	H	M	H
CO3	H	L	M	M	M	H	M	H	M	H
CO4	H	L	M	M	M	H	M	H	M	H
CO5	H	L	M	M	M	H	M	H	H	H

H-High; M-Medium; L-Low

PRINCIPAL
K. S. Rangasamy College of Arts & Science
(Autonomous)
TIRUCHENGODE - 637 215
Namakkal-Dt. Tamil Nadu. INDIA.



Mr. M. PRASAD, M.Sc., M.B.A., M.Phil.
Controller of Examinations
K.S. Rangasamy College of Arts & Science, (Autonomous)
Tiruchengode - 637 215, Tamilnadu, India.

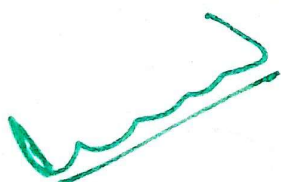
18UBCMP501	CORE PRACTICAL V: IMMUNOLOGY AND CLINICAL BIOCHEMISTRY
CO1	Execute the immunological techniques
CO2	Handle the blood and urine samples
CO3	Perform the quantification experiments of metabolites and determine the enzyme activity for diagnosis of diseases

18UBCSB501	SBC III: PHARMACOGNOSY (100% INTERNAL EVALUATION)
CO1	Describe the history and scope of pharmacognosy
CO2	Correlate the general concepts in ancient and modern medicine
CO3	Collect, identify and utilize the medicinal plants
CO4	Extract the crude extracts from plants using various extraction procedures
CO5	Analyze and use the methods of drug evaluation processes

MAPPING										
PO,PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4	PSO5
CO										
CO1	H	M	M	H	H	M	M	M	H	H
CO2	H	M	M	H	H	M	M	M	H	H
CO3	H	M	M	H	H	L	H	M	H	H
CO4	H	M	M	H	H	L	H	M	H	H
CO5	H	M	M	H	H	L	H	M	H	H

H-High; M-Medium; L-Low

18UBCM601	CORE IX: PLANT BIOCHEMISTRY
CO1	Explain the structure of photosynthetic pigments and their role in photosynthesis
CO2	Deduce the transport mechanism, absorption and transpiration process
CO3	Figure out the biochemistry of nitrogen fixation
CO4	Presume the synthesis and physiological effects of plant growth regulators
CO5	Discuss the types of plant stress and the role of defense system in plants

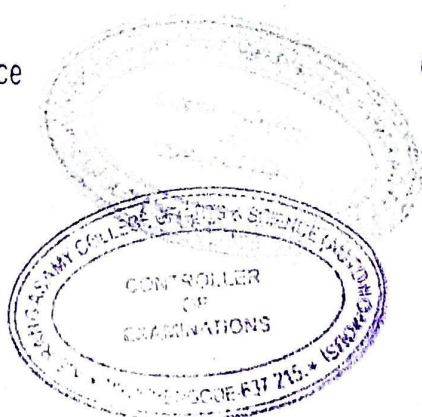


PRINCIPAL
K. S. Rangasamy College of Arts & Science
(Autonomous)

FRUCHENGOODE - 637 215

Kanchi District, Tamil Nadu, INDIA

Phone: 0420-2333333, 2333334, 2333335
Fax: 0420-2333336, 2333337, 2333338



Mr. M. PRASAD, M.Sc., M.B.A., M.Phil.
Controller of Examinations

K. S. Rangasamy College of Arts & Science (Autonomous)
Fruchengode - 637 215, Tamilnadu, India

Phone: 0420-2333333, 2333334, 2333335
Fax: 0420-2333336, 2333337, 2333338

MAPPING										
PO,PSO CO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	M	L	M	H	H	H	L	H	M	L
CO2	M	L	M	H	H	M	H	H	M	L
CO3	M	L	M	H	H	M	H	H	M	L
CO4	M	L	M	H	H	M	L	H	H	H
CO5	M	L	M	H	H	M	L	H	H	H

H-High; M-Medium; L-Low

18UBCM602	CORE X: PHARMACEUTICAL BIOCHEMISTRY
CO1	Describe the pharmacokinetics and dynamics of drug molecule
CO2	Explain the basic concepts in drug receptor reaction
CO3	Categorize the biotransformation reactions of drug molecule
CO4	Exemplify the fundamental concept, mode of action of chemotherapeutics
CO5	Illustrate the biological effects of drug dependence and drug abuse

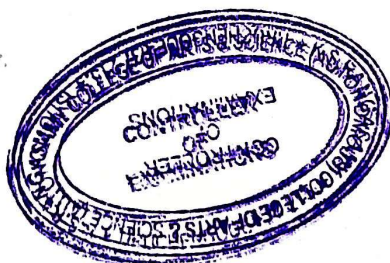
MAPPING										
PO,PSO CO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	M	L	M	M	H	M	L	M	H	H
CO2	M	L	M	L	H	M	L	M	H	H
CO3	M	L	M	M	H	M	L	M	H	H
CO4	M	L	M	L	H	M	L	M	H	H
CO5	M	H	M	M	H	M	L	M	H	H

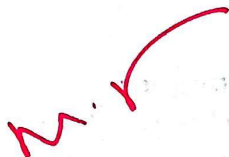
H-High; M-Medium; L-Low

18UBCM603	CORE XI: GENETIC ENGINEERING
CO1	Isolate and purify of DNA
CO2	Recognize the general principles in gene cloning
CO3	Characterize the gene cloning vectors and different methods in gene transfer
CO4	Portray the gene cloning and expression strategies
CO5	Compute the methods in production of genetically modified organisms


PRINCIPAL

K. S. Rangasamy College of Arts & Science
(Autonomous)
TIRUCHENGODE - 637 215
Namakkal-Dt. Tamil Nadu. INDIA.




Mr. M. PRASAD, M.Sc., M.B.A., Mr ...
Controller of Examinations
K.S. Rangasamy College of Arts & Science (Autonomous)
Tiruchengode - 637 215. Tamilnadu. India.

MAPPING										
PO,PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4	PSO5
CO										
CO1	M	L	M	H	H	M	H	L	H	H
CO2	M	L	M	H	H	M	H	L	H	H
CO3	M	L	M	H	H	M	H	L	H	H
CO4	M	L	M	H	H	M	H	L	H	H
CO5	M	L	M	H	H	M	H	L	H	H
H-High; M-Medium; L-Low										

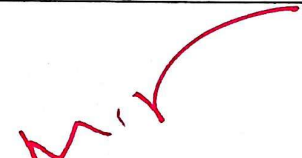
18UBCEL601	ELECTIVE II: COMPUTATIONAL BIOLOGY
CO1	Describe the basic concepts and subfields in genomics
CO2	Portray the wide-ranging conceptions in proteomics
CO3	Depict the nature, classification and properties of biological databases
CO4	Predict the protein structure and use the sequence database
CO5	Illustrate the methods in similarity sequences searching

MAPPING										
PO,PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4	PSO5
CO										
CO1	H	L	H	H	H	M	H	H	H	H
CO2	H	L	H	H	H	M	H	H	H	H
CO3	H	L	H	H	H	M	H	H	H	H
CO4	H	L	H	H	H	M	H	H	H	H
CO5	H	L	H	H	H	M	H	H	H	H
H-High; M-Medium; L-Low										

18UBCEL602	ELECTIVE II: BIOMEDICAL INSTRUMENTATION
CO1	Explain the classification of biomedical instruments
CO2	Analyze the working of electrodes and transducers
CO3	Relate the principle & working of biopotential recorders
CO4	Tailor on the principles and working physiological assist devices
CO5	Narrate the recent advancements in biomedical instruments


PRINCIPAL
K. S. Rangasamy College of Arts & Science
 (Autonomous)




Mr. M. PRAGAD, M.Sc., M.B.A.,
 Controller of Examinations
 K.S. Rangasamy College of Arts & Science (Autonomous)
 Tiruchengode - 637 215, Tamilnadu, India.

MAPPING										
PO,PSO CO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	M	L	M	M	H	L	H	M	H	H
CO2	M	L	M	M	H	L	H	M	H	H
CO3	M	L	M	M	H	L	H	M	H	H
CO4	M	L	M	M	H	L	H	M	H	H
CO5	M	L	M	M	H	L	H	M	H	H

H-High; M-Medium; L-Low

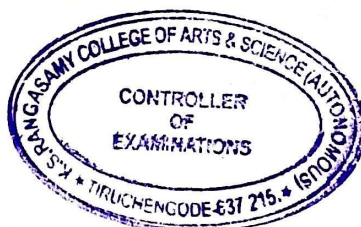
18UBCMP601	CORE PRACTICAL VI : PLANT BIOCHEMISTRY & GENETIC ENGINEERING
CO1	Perform the extraction and screening procedure in identification of plant metabolites
CO2	Execute the plant tissue culture techniques
CO3	Demonstrate the DNA isolation procedure

18UBCSB601	SBC IV: PHYTOCHEMISTRY
CO1	Explain the history of phytomedicine and sources of drugs
CO2	Classify the secondary metabolites and use the extraction & screening methods
CO3	Discriminate the chemistry and functions of carbohydrate derived products
CO4	Categorize the sources and biological significance of tannin and flavonoid derived compounds
CO5	Explicate the structure and importance of alkaloid & terpenoid containing drugs

MAPPING										
PO,PSO CO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	M	M	M	H	H	H	L	L	H	H
CO2	M	M	M	H	H	H	H	L	H	H
CO3	M	M	M	H	H	H	M	L	H	H
CO4	M	M	M	H	H	H	L	L	H	H
CO5	M	M	M	H	H	H	L	L	H	H

H-High; M-Medium; L-Low

PRINCIPAL
K. S. Rangasamy College of Arts & Science
(Autonomous)
TIRUCHENGODE - 637 215
Namakkal-Dt. Tamil Nadu. INDIA.



Mr. M. PRASAD, M.Sc., M.B.A., M.A.
Controller of Examinations
K.S. Rangasamy College of Arts & Science (Autonomous)
Tiruchengode - 637 215, Tamilnadu, India.

18UBCAC301	ADD ON COURSE I: CLINICAL LABORATORY TECHNIQUES
CO1	Explain about the automated systems in clinical laboratories
CO2	Describe the components of blood and the methods of analysis
CO3	Illustrate the various blood grouping systems, complications in blood transfusion, methods in collection and storage of blood in blood banks
CO4	Handle and examine biological samples using appropriate methods
CO5	Engage themselves in tissue preparations, staining and destaining processes

MAPPING										
PO,PSO CO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	M	M	M	H	H	H	H	M	M	H
CO2	M	M	M	H	H	H	H	M	M	H
CO3	M	M	M	H	H	H	H	M	M	H
CO4	M	M	M	H	H	H	H	M	M	H
CO5	M	M	M	H	H	H	H	M	M	H

H-High; M-Medium; L-Low

18UBCAC401	ADD ON COURSE II: MEDICAL TERMINOLOGY (For Medical Coding/Medical Transcription)
CO1	Define the basics, components and importance of medical terms
CO2	Spell correctly the common medical terms associated with human anatomy
CO3	Describe the terms associated with skeletal and muscular system
CO4	Explain the terminology of cardiovascular and respiratory system
CO5	Interpret the conditions of gastrointestinal and urinary system

MAPPING										
PO,PSO CO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	M	M	L	H	H	H	L	M	H	H
CO2	M	M	L	H	H	H	L	M	H	H
CO3	M	M	L	H	H	H	L	M	H	H
CO4	M	M	L	H	H	H	L	M	H	H
CO5	M	M	L	H	H	H	L	M	H	H

H-High; M-Medium; L-Low

PRINCIPAL
K. S. Rangasamy College of Arts & Science
(Autonomous)
TIRUCHENGODE - 637 215
Namakkal - 637 215



Mr. M. PRASAD, M.Sc., M.B.A., M.Phil.,
Controller of Examinations
K.S. Rangasamy College of Arts & Science (Autonomous)
Tiruchengode - 637 215, Tamilnadu, India.

18UBCNM301	NMEC I: BIOCHEMISTRY IN HEALTH AND DISEASES
CO1	Explain about the sources, function of carbohydrates and disorders of carbohydrate metabolism
CO2	Elucidate the classification and functions of proteins and their deficiency diseases
CO3	Explicate the structure and biological importance of lipids
CO4	Expound the dietary sources, recommended daily allowance and over consumption of minerals
CO5	Illustrate the classification, sources, functions and deficiency of vitamins

MAPPING										
PO,PSO CO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	M	L	M	H	H	H	L	H	M	M
CO2	M	L	M	H	H	H	L	H	M	M
CO3	M	L	M	H	H	H	L	H	M	M
CO4	M	L	M	H	H	H	L	H	M	M
CO5	M	L	M	H	H	H	L	H	M	M

H-High; M-Medium; L-Low

18UBCNM401	NMEC II : FUNCTIONAL BIOLOGY
CO1	Describe the organization of cells, tissues, organs and body fluids
CO2	Explain the respiratory process in living system
CO3	Discriminate the types of blood cells, blood vessels and blood groups
CO4	Illustrate the digestion process and digestive disorders
CO5	Describe the structure of renal system and nervous system

MAPPING										
PO,PSO CO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	M	L	L	M	M	H	L	H	M	M
CO2	M	L	L	M	M	H	L	H	M	M
CO3	M	L	L	M	M	H	L	H	M	M
CO4	M	L	L	M	M	H	L	H	M	M
CO5	M	L	L	M	M	H	L	H	M	M

H-High; M-Medium; L-Low

PRINCIPAL
K. S. Rangasamy College of Arts & Science
 (Autonomous)
TIRUCHENGODE - 637 215
 Namakkal-Dt. Tamil Nadu. INDIA.



Mr. M. PRASAD, M.Sc., M.B.A.,
 Controller of Examinations
 K.S. Rangasamy College of Arts & Science (Autonomous)
 Tiruchengode - 637 215, Tamilnadu, India.

18UBCAL401	ADVANCED LEARNER COURSE I: FOOD BIOCHEMISTRY
CO1	Explain the properties and activity of water in foods
CO2	Describe the characteristics and properties of biomolecules
CO3	Elucidate the microorganisms in food spoilage and food poisoning
CO4	Illustrate the functional characteristics of food additives
CO5	Recite about food colours, preservatives and adulterants

MAPPING										
PO,PSO CO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	M	L	M	M	M	M	L	M	H	H
CO2	M	L	M	M	M	M	L	M	H	H
CO3	M	L	M	M	M	M	L	M	H	H
CO4	M	L	M	M	M	M	L	M	H	H
CO5	M	L	M	M	M	M	L	M	H	H

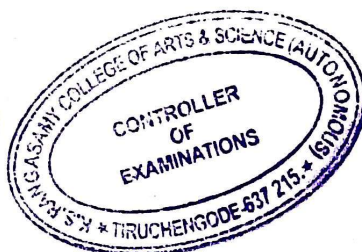
H-High; M-Medium; L-Low

18UBCAL402	ADVANCED LEARNER COURSE I: BIOPROCESS TECHNOLOGY
CO1	Recall the types and working of fermentors
CO2	Perform isolation and culturing of microorganism for industrial use
CO3	Illustrate the stages in downstream processing
CO4	Discriminate the commercial production of enzymes, organic acids and organic solvents
CO5	Demonstrate the production of vitamins, antibiotics and polysaccharides

MAPPING										
PO,PSO CO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	M	L	M	H	H	M	H	M	H	H
CO2	M	L	M	H	H	M	H	M	H	H
CO3	M	L	M	H	H	M	H	M	H	H
CO4	M	L	M	H	H	M	H	M	H	H
CO5	M	L	M	H	H	M	H	M	H	H

H-High; M-Medium; L-Low

PRINCIPAL
K. S. Rangasamy College of Arts & Science
 (Autonomous)
TIRUCHENGODE - 637 215
 Namakkal-Dt. Tamil Nadu, INDIA.



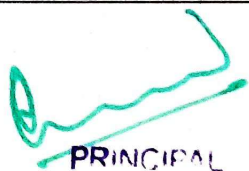
Mr. M. PRASAD, M.Sc., M.B.A., M.Phil.,
 Controller of Examinations
 K.S. Rangasamy College of Arts & Science (Autonomous)
 Tiruchengode - 637 215, Tamilnadu, India.

18UBCAL501	ADVANCED LEARNER COURSE II: SOIL BIOCHEMISTRY
CO1	Analyze the composition and properties of soil
CO2	Appraise the usage and benefits of biofertilizers and biopesticides
CO3	Adapt the concept of biomass, biofuel and bioleaching
CO4	Apply the concept of biogeochemical cycle and illustrate its importance
CO5	Assess the methods of remedial measures in conservation of natural resources

MAPPING										
PO,PSO CO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	M	L	L	M	M	L	H	L	H	H
CO2	M	L	L	M	M	L	H	L	H	H
CO3	M	L	L	M	M	L	H	L	H	H
CO4	M	L	L	M	M	M	H	L	H	H
CO5	M	L	L	M	M	M	H	L	H	H

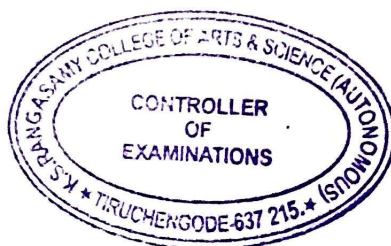

H-High; M-Medium; L-Low

18UBCMBA301 / 18UBCBTA301	ALLIED III : BIOCHEMISTRY (BIOMOLECULES)
CO1	Explain the structure of carbohydrates and their functions
CO2	Describe the nature of Nature of amino acids, functions and structural organization of proteins
CO3	Illustrate on characterization of lipids and their functions
CO4	Interpret the classification, characteristics and basic concepts of enzyme action
CO5	Elucidate the classification and clinical significance of micronutrients



PRINCIPAL

K. S. Rangasamy College of Arts & Science
(Autonomous)
TIRUCHENGODE - 637 215
Namakkal-Dt. Tamil Nadu. INDIA.

Mr. M. PRASAD, M.Sc., M.B.A., M.Phil.
Controller of Examinations
K.S. Rangasamy College of Arts & Science (Autonomous)
Tiruchengode - 637 215. Tamilnadu. India.

MAPPING


CO \ PO,PSO	MAPPING									
	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	H,M	M,L	M,L	H,M	H,M	H,M	M,M	M,H	H,H	H,L
CO2	H,M	M,L	M,L	H,M	H,M	H,M	M,M	M,H	H,H	H,L
CO3	H,M	M,L	M,L	H,M	H,M	H,M	M,M	M,H	H,H	H,L
CO4	H,M	M,L	M,L	H,M	H,M	H,M	M,M	M,H	H,H	H,L
CO5	H,M	M,L	M,L	H,M	H,M	H,M	M,M	M,H	H,H	H,L

H-High; M-Medium; L-Low

18UBCMBAP301 / 18UBCBTAP301	ALLIED PRACTICAL III: BIOCHEMISTRY (BIOMOLECULES)
CO1	Perform qualitative analysis for identification of Biomolecules
CO2	Do quantification of biomolecules by titrimetric methods


PRINCIPAL
K. S. Rangasamy College of Arts & Science
(Autonomous)
TIRUCHENGODE - 637 215
Namakkal-Dt. Tamil Nadu. INDIA.




MR. M. PRASAD, M.Sc., M.Phil., M.A., M.L.S.
Controller of Examinations
K.S. Rangasamy College of Arts & Science (Autonomous)
Tiruchengode - 637 215, Tamilnadu, India.