



**KONGU ARTS AND SCIENCE COLLEGE**

**(An Autonomous Institution, Affiliated to Bharathiar University, Coimbatore)**

**ERODE – 638 107**

**M.Sc (Biochemistry)**



# **KONGU ARTS AND SCIENCE COLLEGE**

**(An Autonomous Institution, Affiliated to Bharathiar University, Coimbatore)**

**ERODE – 638 107**

**2017-2018**



# **KONGU ARTS AND SCIENCE COLLEGE**

**(An Autonomous Institution, Affiliated to Bharathiar University, Coimbatore)**

**ERODE – 638 107**

# **SYLLABUS**

Sem.	Course Code	CORE PAPER I - BIOPOLYMERS	Total Marks: 100		Hours Per Week	Credits
			CIA: 25	ESE: 75		
I	17 PBFCT101				5	4

**Objectives:**

- To provide an overview of the macromolecules that are key to all living system.
- To develop sufficient knowledge about higher order structures i.e. Polysaccharides, Proteins, Lipids, Nucleic acids and Natural Products.
- At the end of this course students will be able to obtain a keen knowledge on the characterization of biological macromolecules.

**UNIT-I****Polysaccharides - Homo and Heteroglycans**

Occurrence, Structure, Isolation, properties and functions of Homoglycans - Starch, Glycogen, Cellulose, Dextrin, Inulin, Chitins, Xylans, Arabinans, Galactans.

Occurrence, Structure, Properties and functions of Heteroglycans – Bacterial cell wall polysaccharides, Glycosaminoglycans, Agar, Alginic acid, Pectins and Deoxy sugars, Blood group substances and Sialic acid.

Glycoproteins and their Biological applications. Lectins - Structure and functions.

**UNIT-II****Proteins**

Classification of Proteins on the basis of solubility and shape, Structure and Biological functions. Isolation, fractionation and purification of proteins.

Primary structure - Peptide Bond, Determination of Amino acid sequence of proteins.

Secondary structure - Weak interactions involved - Alpha helix, Beta sheet and Beta turns structure. Pauling and Corey model for fibrous proteins. Collagen triple helix. Super secondary structures (Helix-Loop-Helix), Ramachandran plot.

Tertiary structure – Bonds involved in stabilizing Tertiary structure (Myoglobin).

Quaternary structure – Structure and Biological functions of Hemoglobin.

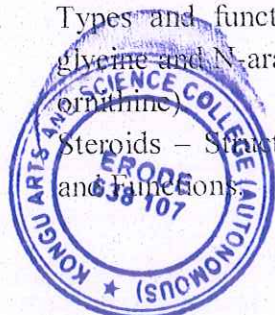
**UNIT-III****Lipids**

Lipids – Classification of lipids. Phospholipids - Classification, Structure and functions. Glycolipids - Ceramides and Sphingomyelins.

Eicosanoids - Structure and functions of Prostaglandin, Thromboxane, Leukotriene.

Types and functions of Plasma lipoproteins. Lipaminoacids – Animal cells (N- acyl glycine and N-arachidonyl serine) and Bacteria (N-acyl-L-homoserine lactones and N-acyl ornithine)

Steroids – Structure and biological significance of Cholesterol. Statin drugs- Properties and functions.



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**UNIT-IV****Nucleic acids**

Watson & Crick Model of DNA structure. A, B and Z forms of DNA. Properties of DNA – Buoyant density, Viscosity, Denaturation and Renaturation; Cot curve analysis. Hypochromic effect.

Major classes of RNA – mRNA, rRNA, tRNA – Structure and biological functions.

DNA-Protein interactions. DNA binding motifs in proteins – Helix Loop Helix (HLH) motif. Zinc finger motif and Leucine zipper motif. Techniques characterizing Nucleic acid-Protein complex – Gel retardation assay, DNase I footprinting.

**UNIT-V****Natural products**

Carbohydrates and derived products - Drugs containing Glycosides, Tannins, Lipids (fixed oils, fats and waxes), Properties and health benefits of Volatile oils, Synthesis and Biological importance of Terpenoids, Alkaloids (Cocaine, Nicotine and Quinine), Flavonoids (Quercetin, Flavonols and Chalcones). Chemistry and potential uses of Quinone derivatives

Heterocyclic compounds – Definition, synthesis and applications of Porphyrin.

Potential uses of Plant and Animal pigments - Betalins, Xanthophyll, Anthocyanin, Cytochrome and Melanin.

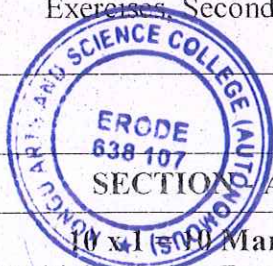
**TEXT BOOKS:**

1. Rastogi S.C, V.N. Sharma, Anuradha Tanden, Concepts in Molecular Biology, 1993.
2. Zubay, GL, 'Biochemistry' WCB Publishers.
3. Deb, A.C., Fundamentals of Biochemistry, New Central Agency, Calcutta, 3<sup>rd</sup> Edition, 1989.

**REFERENCE BOOKS:**

1. Lehninger, A.L., Nelson, D.L., Cox, M.M., Principles of Biochemistry, CBS Publishers, 2<sup>nd</sup> Edition, 1993.
2. Lubert stryer, Biochemistry, Freeman and company, 4th Edition, 1995.
3. Voet and Voet, John Wiley and sons NY, 'Fundamentals of Biochemistry' 2002.
4. Thomas .M. Devlin, 'Text Book of Biochemistry with clinical correlation', John WileyLiss, Hobokhen NJ publishers 2006.
5. Robert N Trigiano, Dennis J Gray, Plant Tissue Culture Concepts and Laboratory Exercises, Second Edition, CRC Press November 1999.

<b>QUESTION PAPER PATTERN</b>		
<b>SECTION - A</b>	<b>SECTION - B</b>	<b>SECTION - C</b>
<b>10 x 1 (50) Marks</b>	<b>5 x 7 = 35 Marks</b>	<b>3 x 10 = 30 Marks</b>
(Multiple Choice. Four options) Two questions from each unit	(Either or choice) Two questions from each unit	(Answer any three Questions) One Question from each unit



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(AUTONOMOUS)



Sem.	Course Code	CORE PAPER II - BIOCHEMICAL TECHNIQUES	Total Marks: 100		Hours Per Week	Credits
			CIA: 25	ESE: 75		
I	17 PBFCT102				5	4

**Objectives:**

- To have a basic understanding of the theoretical principles involved in Bioinstrumentation
- To have the practical skills and techniques required in biochemical analysis
- To become competent in the basic experimental techniques of biochemistry

**UNIT – I**

**Chromatographic Techniques** – Principle, technique and applications of Paper, Thin Layer Chromatography, Ion-exchange, Molecular sieve, Affinity, Adsorption, Gas Liquid Chromatography, High Performance Liquid Chromatography (HPLC).

**Identification and Expression Assay** – Flow Cytometry, DNA Microarray and Protein Microarray.

**Cytotoxicity Assay** – Comet and MTT Assay.

**UNIT - II**

**Electrophoresis** – Principle, technique and applications of Agarose gel Electrophoresis for DNA separation, SDS-PAGE for protein separation, Isoelectric focusing, Capillary electrophoresis, 2D gel electrophoresis, Pulsed-field gel electrophoresis for DNA separation, KASPar assay.

Applications of Electrophoresis in Blotting techniques and DNA Fingerprinting.

**UNIT - III**

**Centrifugation** – Basic Principles, Relative Centrifugal Force (RCF), Factors affecting Sedimentation. Ultracentrifuge – Preparative and Analytical ultracentrifuge.

Preparative Ultracentrifuge: Subcellular organelle separation by Density gradient and Differential centrifugation. Analytical ultracentrifuge – Determination of molecular weight by Sedimentation Velocity method.

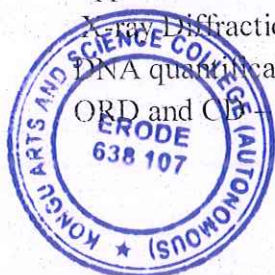
**UNIT - IV**


**Spectrophotometry** – Basic principles, Laws of Absorption, UV Visible and IR Spectroscopy. ESR, NMR, Mass Spectrometry, Flame Photometry, Fluorimetry, Applications of GC-MS.

X-ray Diffraction technique – Principle, Instrumentation and Applications.

DNA quantification using NanoDrop.

ORD and CD – Principle and Applications.



  
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### UNIT - V

**Radiochemical techniques** – Nature of Radioactive Emissions – Alpha, Beta, Gamma Emissions. Units of Radioactivity. Detection and Measurement of Radioactivity – GM Counter, Scintillation Counting and Autoradiography. Radioactive ( $^{32}\text{P}$ ) and Nonradioactive (Digitonin) Labeling. Applications of Radioisotopes in Biology. Radiochemical purity in Radiopharmaceuticals. Radiation safety in Radioisotope Laboratories.

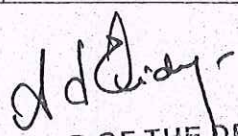
### TEXT BOOKS:

1. Asokan, Analytical Biochemistry, China Publications, 2003.
2. Upadhyay *et al.*, Biophysical Chemistry – Principles and Techniques, Himalaya Publishing House, 2009.
3. Sharma.V.K, Instrumental Methods for Chemical Analysis, XI Edition, 1981.
4. Plummer.D.T, An Introduction to Practical Biochemistry, III Edition, 1998.


### REFERENCE BOOKS:

1. Wilson and Walker, A biologist's guide to principles and techniques of Practical Biochemistry, V Edition, Cambridge University Press, 2000.

QUESTION PAPER PATTERN		
SECTION - A	SECTION - B	SECTION - C
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Sem.	Course Code	CORE PAPER III - ENZYMES AND ENZYME TECHNOLOGY	Total Marks: 100		Hours Per Week	Credits
			CIA: 25	ESE: 75		
I	17 PBFCT103				4	4

**Objectives:**

- To acquaint students with fundamental of enzymes and kinetics of enzyme catalysed reactions.
- To provide a comprehensive overview about the principles of enzymology and techniques employed in the utilization of enzymes.
- To acquire a better understanding on the modern approaches of enzyme technology and their applications.

**UNIT I**

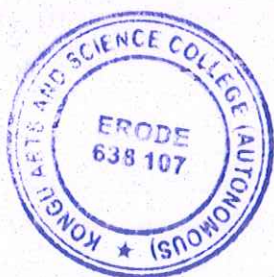
**Enzymes:** Introduction, Classification of enzymes, Factors affecting enzyme activity. Active site- Definition: investigations of active site structure, Trapping ES complex, use of substrate analogues. Enzyme modification by treatment with proteases, Enzyme modification by site directed mutagenesis. Isoenzymes (LDH and CK), Multienzyme complex (Fatty acid Synthetase complex).


**UNIT II**

**Mechanism of Enzyme Action:** Enzyme catalysis- Acid base catalysis, covalent catalysis, Mechanisms of catalysis -Lysozyme, Chymotrypsin. Metal activated enzymes & Metallo enzymes. Role of metal ions in mechanism - Carbonic anhydrase, Superoxide dismutase, Carboxy peptidase. Coenzymes - Pyridoxal Phosphate, Co-enzyme A, TPP, NAD and FAD and its catalytic reaction. Cofactors.

**UNIT III**

**Enzyme kinetics:** Michaelis Menten equation and its significance, Lineweaver Burk plot, Eadie - Hofstee plot and Hanes plot. Allosteric enzymes- Concerted, Sequential Model, Allosteric inhibition- Aspartate transcarbomylase and regulation. Enzyme inhibition - Types & kinetic differentiation of Competitive, Non-competitive and Uncompetitive inhibitions. Ribozyme and Abzymes.



  
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#### UNIT IV

**Industrial applications of enzymes:** Extraction, Purification and Stabilization of Amylases (Bacterial and Fungal) and Proteases (Bacterial and Fungal).

**Applications of Enzymes in Food industry:** Role of enzymes in Brewing, Baking, and meat processing industry.

Applications of Enzymes in Detergent, Leather, Textile Processing.

Clinical application of enzymes – Diagnostic and Therapeutic enzymes.

#### UNIT V

**Immobilised enzymes:-** Techniques of immobilization and applications of immobilized enzyme. Biosensors: Calorimetric biosensors: Potentiometric biosensors: Amperometric biosensors, Immunosensors.

**Recent advances and future prospects in Enzyme Technology:** Enzymes and recombinant DNA technology, Modification enzymes.

**Enzyme engineering-** Synthesis of artificial enzymes, Use of 'unnatural' substrates.

#### TEXT BOOKS:

1. Palmer, 'Understanding Enzymes' 3rd edition, Printice Hall, 1991
2. Trevor Palmer and Philip Bonner, 'Enzymes', 2<sup>nd</sup> Edition, Woodhead publishing, 2007.
3. Enzymes – Dixon and Webb.
4. Alan Welshman, 2nd Edition, Hand book of enzyme biotechnology.

#### REFERENCE BOOKS:

1. Marangoni, John Wiley, 'Enzyme Kinetics. 'A Modern Approach', 2002.
2. Chapline, Bucke, 'Enzyme Technology', 1<sup>st</sup> Edition, Cambridge University Press, 1990.
3. Price and Stevens, 'Fundamentals of enzymology', 2nd edition, Oxford University Press, 1995
4. Nooralabettu Krishna Prasad, 'Enzymes technology', PHI Learning Pvt, 2011.
5. Galy Walch, Protein Biotechnology.

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Sem.	Course Code	CORE PAPER V - PLANT BIOCHEMISTRY AND BIOTECHNOLOGY	Total Marks: 100		Hours Per Week	Credits
			CIA: 25	ESE: 75		
I	17 PBFCT105				4	4

**Objectives:**

- To provide sufficient knowledge about the various metabolic pathways and its applications in plant productivity
- To obtain knowledge on production of transgenic plants
- To become familiar with the exciting topics in plant biology research

**UNIT-I**

**Photosynthesis:** Photosynthetic apparatus- Chloroplast. Organisation of thylakoid. Photosynthetic pigments - Structure, biosynthesis and functions of Chlorophyll, Carotenoids. Light absorption and energy conservation by pigment molecules.

**Electron Transport System:** Reaction centre complex. Photo system(s) I and II. Cyclic and Noncyclic Photophosphorylation. Electron transport pathways in Chloroplast membranes. ATP synthesis in Chloroplasts.

**UNIT-II**

**Carbon reactions in plants:** Calvin Cycle (C<sub>3</sub>), Hatch-Slack Cycle(C<sub>4</sub>) and CAM plants. Photorespiration (C<sub>2</sub>) Cycle and its importance.

**Metabolic Pathways:** Pathways of glucose oxidation in plants. Starch biosynthesis and degradation. Overview of lipid and protein metabolism in plants. Phytochrome and its role in flowering of plants. Biochemical changes during Senescence.

**UNIT-III**

**Nitrogen Cycle:** Nitrogen fixation- Enzymology of nitrogen fixation. Symbiotic nitrogen fixation- Root nodules and Symbiosomes. Symbiotic nitrogen fixation in legumes by Rhizobia. Nitrate Reduction , Nitrite Reduction and Nitrogen Assimilation. Non-symbiotic nitrogen fixation, Nitrogen assimilation.

**Sulphur Cycle:** Chemistry and functions, Sulphur uptake and transport, Sulfate activation and reduction in plants.

**Xenobiotics:** Role of Glutathione during Stress condition.

**UNIT-IV**

**Plant gene:** Structure of plant genes. Nuclear and Chloroplast and Mitochondrial genome. Biosynthesis and development of chloroplast.

**Plant tissue culture:** Tissue culture media- MS media- composition and preparation. Callus culture and initiation.

Micro propagation- Organogenesis and Somatic embryogenesis. Somaclonal variation, Protoplast culture and Protoplast fusion, Identification of Hybrids - Physiological, Biochemical and Molecular markers.

Production of Haploid plants-Androgenesis and Gynogenesis.



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**UNIT-V**

**Transgenesis:** Gene transfer in plants - Direct gene transfer: Biolistics; Vector mediated transfer - *Agrobacterium* mediated transformation using Ti and Ri plasmids. Plant viruses as Vectors - CaMV and Gemini viruses.

**Application of Transgenic plants:** Insect resistant (Bt toxin) plants, Virus resistant plants, Herbicide resistant (glyphosate) plants. Germplasm conservation. Genetically engineered plants as Protein factories.

**TEXT BOOKS:**

1. T.A.Brown, 'Gene Cloning: An Introduction' 3<sup>rd</sup> edition, Chapman & Hall, 1995.
2. Verma.S.K., A textbook of Plant Physiology and Biochemistry, 3<sup>rd</sup> Revised Edition. S.Chand & Company, 2000.
3. Dr.U.Satyanarayana, Biotechnology, Books and Allied (P) Ltd., 2005.

**REFERENCE BOOKS:**

1. Bob, Buchannan "Biochemistry and Molecular biology of plants" L.K International Pvt. Ltd, 2000.
2. Anderson, Beandall, "Metabolic activities of plant cells" Blackwell Scientific Publishers
3. Anderson, Beandall, "Biochemistry and molecular biology of plants" Blackwell Scientific Publishers, 1960.
4. Bonner, Varner, "Plant biochemistry" 3rd edition, Academic Press Inc, 1997.
5. Chrispeels *et al.*, Jones and Bartlett, "Plants, genes and crop biotechnology" 2nd edition, 2002.
6. Doyle, Griffiths, John Wiley,"Cell and tissue culture: laboratory procedures"1998.
7. Hans, Walter-Heldt, "Plant biochemistry and molecular biology" Oxford University Press, 1997
8. Nicholls, "Genetic engineering" 2nd edition, Cambridge University Press, 2002
9. Primrose *et al.*, "Principles of gene manipulation" 6th edition, Blackwell Scientific Publishers, 2001
10. William .G.Hopkins,Norman .P.A .Huners, Plant Physiology 4<sup>th</sup> Edition 2008.

QUESTION PAPER PATTERN		
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Sem.	Course Code	CORE BIOCHEMISTRY PRACTICAL - I	Total Marks: 100		Hours Per Week	Credits
			CIA: 40	ESE: 60		
I	17 PBFCP106				4	3

### I. Biochemical Calculations

1. Preparation of Molar solutions, Normal solutions and Percentage solutions [v/v, w/v].  
Dilution factor calculations.

### II. Colorimetric experiments

2. Isolation and estimation of Starch from Potato
3. Estimation of Fructose in Fruits
4. Estimation of Lactose from Milk
5. Isolation and estimation of Ascorbic acid from Fruit
6. Estimation of Protein by Lowry Method

### III. Separation techniques

7. Separation of Amino acids by Paper Chromatography – Circular and Ascending
8. Separation of Lipids by Thin Layer Chromatography
9. Separation of plant pigments by Column Chromatography

### IV. Bioinformatics

10. Sequence and Structural Database –NCBI, EMBL,DDBJ, PDB
11. Search Similarity tools - BLAST and Clustal W
12. Gene Prediction using GenMark and GenScan
13. Proteomics tools – Expsy
14. Molecular Visualisation tools – Rasmol, Spdbv.

### BOOKS FOR REFERENCES

1. David T. Plummer, An introduction to practical biochemistry.
2. Pattabiraman, Laboratory manual in biochemistry.
3. J.Jayaraman, Practical Biochemistry.
4. K. Mani and N. Vijayaraj, Bioinformatics for Beginners, I Edition, Kalaikathir Achagam, Coimbatore, 2002.

Question Paper Pattern (60 Marks)							
Major & Minor Experiments	40	Spotter	10	Viva Voce	05	Record	05



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Sem.	Course Code	CORE BIOCHEMISTRY PRACTICALS - II	Total Marks: 100		Hours Per Week	Credits
II	17 PBF205		CIA: 40	ESE: 60	5	3

### I. Plant Biochemistry

- Qualitative analysis of Phytochemicals:
  - Carbohydrates
  - Alkaloids
  - Anthraquinones
  - Flavonoids
  - Phenols
  - Lipids
  - Proteins and Aminoacids

### II. Colorimetry and Spectroscopic experiments:

- Estimation of RNA – UV and visible methods
- Isolation and estimation of DNA from spleen/liver – UV and visible method
- Criteria of Purity of DNA
- Estimation of Total Phenol
- Estimation of Total Flavanoids

### Enzyme studies: (Group Experiments)

- Isolation, purification, properties, kinetic studies of the following enzymes:
  - Amylase
  - Protease

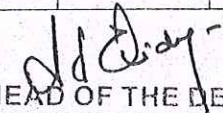
### III. Immunology

- Immunodiffusion
- Immuno-electrophoresis
- Rocket immunoelectrophoresis


### BOOKS FOR REFERENCES

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- Pattabiraman, Laboratory manual in Biochemistry.
- J.Jayaraman, Practical Biochemistry.

Question Paper Pattern (60 Marks)							
Major & Minor Experiments	40	Spotter	10	Viva Voce	05	Record	05

  
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# **ACTIVITIES**



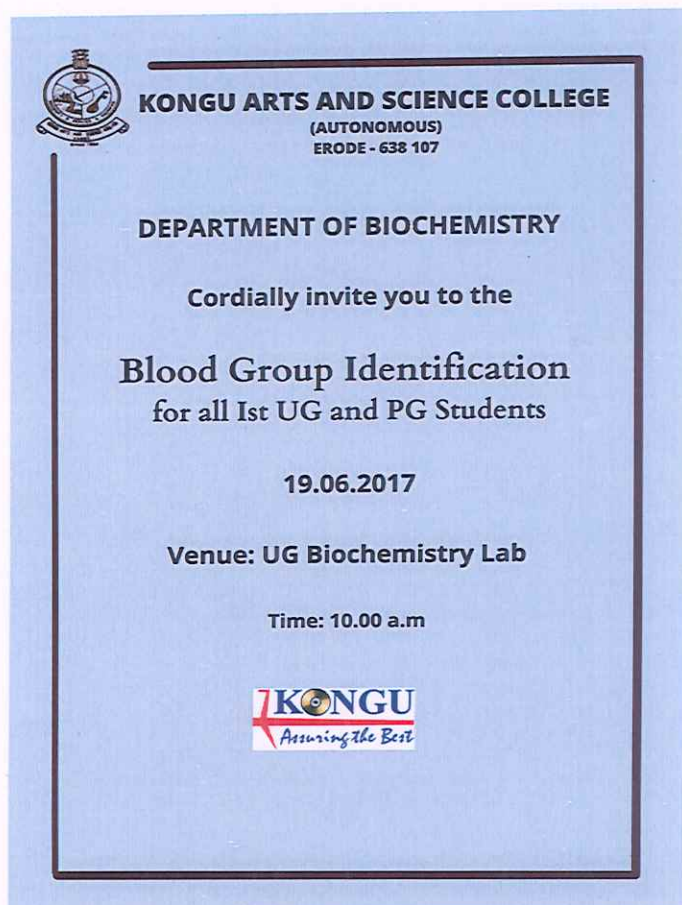


**KONGU ARTS AND SCIENCE COLLEGE (AUTONOMOUS), ERODE**  
**DEPARTMENT OF BIOCHEMISTRY**

**Blood Group Identification**

19.06.2017

REPORT



**KONGU ARTS AND SCIENCE COLLEGE**  
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ERODE - 638 107

**DEPARTMENT OF BIOCHEMISTRY**

Cordially invite you to the

**Blood Group Identification**  
for all Ist UG and PG Students

**19.06.2017**

**Venue: UG Biochemistry Lab**

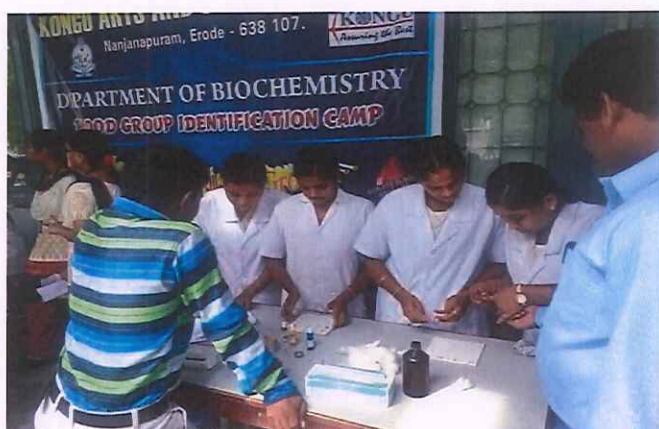
**Time: 10.00 a.m**

**KONGU**  
Assuring the Best

The accurate grouping of blood is very important when it comes to having a blood transfusion. If blood is given to a patient that has a blood type that is incompatible with the blood type of the blood that the patient receives, it can cause intravenous clumping in the patient's blood which can be fatal. The patient's body can start producing antibodies that attack the antigens on the blood cells in the blood that was given to the patient, causing reaction and rejection.

Department of Biochemistry conducted Blood group identification camp for I UG and I PG students on 19.06.2017 at the College auditorium

Nearly, 1100 students blood group were identified and the awareness of blood group identification was emphasized. This helps them to donate or receive blood in case of emergency conditions.



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**KONGU ARTS AND SCIENCE COLLEGE (AUTONOMOUS), ERODE**  
**DEPARTMENT OF BIOCHEMISTRY**

**Signing MoU with M/S SpinoS Life Science and Research Private Limited**

12.07.2017

**REPORT**



A memorandum of understanding is a document that describes the broad outlines of an agreement that two or more parties have reached. The purpose of College MoU with Industry can minimize the gap between learning and carrier opportunity. The industry has many new technology requirements, so industry-academic interaction plays a vital role in the placements Support and carrier growth for the students.

To provide industrial exposure to the students and faculty of the Kongu Arts and Science College, Erode, a Memorandum of Understanding (MoU) was signed between the college and M/S SpinoS Life Science and Research Private Limited, Coimbatore. The MoU was signed by Mr. A.Kellango, Correspondent of the college, Dr. N. Raman, Principal and Mr.R. Gowrishankar, Manager M/S SpinoS Life Science and Research Private Limited in the presence of Dr.A.K.Vidya, Professor and Head, Department of Biochemistry on 12.07.2017.



*A.K. Vidya*  
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**KONGU ARTS AND SCIENCE COLLEGE (AUTONOMOUS), ERODE**  
**DEPARTMENT OF BIOCHEMISTRY**

**Market Research Survey Study for CavinKare Pvt.Ltd, Chennai**

12.07.2017

REPORT



**KONGU ARTS AND SCIENCE COLLEGE**  
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**DEPARTMENT OF BIOCHEMISTRY**  
in association with  
**M/S SpinoS Life Science and Research Pvt. Ltd**

Cordially invite you to the  
**Mou Signing**  
&  
**Market Research Survey Study for**  
**CavinKare Pvt.Ltd, Chennai**



**SPINOS**  
LIFE SCIENCE AND RESEARCH PRIVATE LIMITED  
Quality in Research


15.02.2018  
Venue: Research Lab  
Time: 10.00 a.m.




A market research survey can help to understand several aspects of the target market. This makes graduates eager and relatively affluent consumers still looking to establish their brand loyalty. Marketing to college students early on gives you a head start against competitors to build trust and loyalty with the affluent, eager and loyal graduate consumer group.

As a part of Mou activity, a Market Research Survey Study for CavinKare Pvt Ltd., Chennai was conducted on 12.07.2017 and 258 girl students from various departments served as participants.



  
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**Dr. N. RAMAN**  
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**KONGU ARTS AND SCIENCE COLLEGE**  
**(AUTONOMOUS)**  
**NANJANAPURAM, ERODE - 638 107.**



KONGU ARTS AND SCIENCE COLLEGE (AUTONOMOUS), ERODE  
DEPARTMENT OF BIOCHEMISTRY

Department Association Symbion' Inauguration

08.08.2017

REPORT



**KONGU**  
ARTS AND SCIENCE COLLEGE  
(AUTONOMOUS)  
ERODE 638 107

DEPARTMENT OF BIOCHEMISTRY

**INVITATION**

The Management, Correspondent, Principal,  
Faculty members & Students Cordially invite you to the

Inauguration of Biochemistry Association

**SYMBION - 17**

Presidential Address  
**Thiru. A.KILANGO**  
Correspondent

Felicitation  
**Dr. N.RAMAN**  
Principal

Inaugural Address  
**Mr. M. Mohan Kumar**  
Process Trainer  
Healthcare Documentation Services  
US & Australian Medical Transcription iMedX  
Information Services Pvt., Ltd., Coimbatore

Time: 10.00 a.m

Venue: PG Seminar Hall

Date: 08.08.2017



The student organizations exist for the purpose of bringing students together, helping them acclimate to life at the university, connecting them to other students, as well as alumni, and can help students develop transferable skills. Participating in a student organization not only teaches you leadership skills but also helps you broaden and improve those you already have. You'll learn the best way to communicate with both individuals and large groups, and you'll gain emotional intelligence as you develop new relationships.

To inculcate the importance of associations to students, Biochemistry Association (Symbion' 2017) was inaugurated by **Mr.M.Mohan Kumar**, Process Trainer, Health Care Documentation Services, US and Australian Medical Transcription iMedX Information Services Pvt Ltd, Coimbatore on 08.08.2017



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KONGU ARTS AND SCIENCE COLLEGE (AUTONOMOUS), ERODE  
DEPARTMENT OF BIOCHEMISTRY

Guest lecture on "Nutraceutical and Functional Foods"

16.08.2017

REPORT



KONGU ARTS AND SCIENCE COLLEGE  
(AUTONOMOUS)  
ERODE - 638 107

DEPARTMENT OF BIOCHEMISTRY

Cordially invite you to the  
Guest Lecture on  
"Nutraceutical and Functional  
Foods"  
Resource Person



**Dr. Palanivel Ganesan,**  
Assistant Professor, Nanotechnology  
Research Center,  
Department of Applied Life  
Sciences, Konkuk University,  
Global Campus, Korea

16.08.2017

Venue: MB 207

Time: 10.00 a.m.



A nutraceutical is defined as **any substance that is a food or part of a food and provides medical or health benefits, including the prevention and treatment of disease.** Nutraceuticals, functional food ingredients and dietary supplements are important for health promotion and disease risk reduction. Nutraceuticals used in the treatment and prevention of different diseases. Nutrients, herbals and dietary supplements are major components of nutraceuticals for maintaining the health, act against various disease conditions and thus promote the quality of life.

A guest lecture about the importance of **Nutraceutical and Functional Foods** was given by **Dr. Palanivel Ganesan,** Assistant Professor, Nanotechnology Research Center, Department of Applied Life Sciences, Konkuk University, Global Campus, Korea as Resource person on 16.08.2017. About 150 students of Biochemistry students were the beneficiaries.



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**KONGU ARTS AND SCIENCE COLLEGE (AUTONOMOUS), ERODE**  
**DEPARTMENT OF BIOCHEMISTRY**

**Blood Donation Camp**

18.08.2017

**REPORT**

 **KONGU ARTS AND SCIENCE COLLEGE**  
(AUTONOMOUS)  
ERODE - 638 107

**Let us come forward for a NOBEL CAUSE**


**DEPARTMENT OF BIOCHEMISTRY**  
&  
Lion's Club of Erode - Midtown

Cordially invite you to the

**BLOOD DONATION CAMP**

on August 18th, 2017  
@  
College Auditorium  
Time: 9.30 A.M. (Onwards)


We value your responses.....  
Donate blood and be the reason of smile to many faces

 **KONGU**  
Assuring the Best


Each day, thousands of people need donated blood and blood products to keep them in good health or allow them to stay alive. The health benefits of donating blood are considerable but of course, the most important part of the process is helping to save lives. Donating blood is good for you, and it's even better for all the people who desperately need the help.

To emphasize the importance of blood donation and blood donation camp was organized at our college on 18.08.2018. Students voluntarily donated blood for a noble cause. The donated blood units were given to government hospitals to help the poor and needy. They save millions of lives and improve the health and quality of life of many patients every day. This extraordinary effort during a time of unprecedented crisis highlights the crucial role of well organized, committed voluntary in ensuring a safe and sufficient blood supply during normal and emergency times. 135 units of blood was donated.



  
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KONGU ARTS AND SCIENCE COLLEGE (AUTONOMOUS), ERODE  
DEPARTMENT OF BIOCHEMISTRY

**Blood Group Identification Camp for School students**

15.12.2017

REPORT



**KONGU ARTS AND SCIENCE COLLEGE**  
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**DEPARTMENT OF BIOCHEMISTRY**

Cordially invite you to the

**Blood Group Identification Camp**  
for  
**Sengulam Government School Students,**  
**Anthiyur**

15.12.2017

Place: Sengulam Government School,  
Sengulam, Anthiyur



The accurate grouping of blood is very important when it comes to having a blood transfusion. If blood is given to a patient that has a blood type that is incompatible with the blood type of the blood that the patient receives, it can cause intravenous clumping in the patient's blood which can be fatal. The patient's body can start producing antibodies that attack the antigens on the blood cells in the blood that was given to the patient, causing reaction and rejection

**Blood group identification** for Sengulam Government School, Sengulam, Anthiyur was done by **Mr.G.Karthikeyan**, Assistant Professor in Biochemistry and II B.Sc students of our department on 15.12.2017.

Nearly, 211 students blood group were identified and the awareness of blood group identification was emphasized. This helps them to donate or receive blood in case of emergency conditions. The accurate grouping of blood is very important during blood transfusion.



*[Signature]*  
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*[Signature]*  
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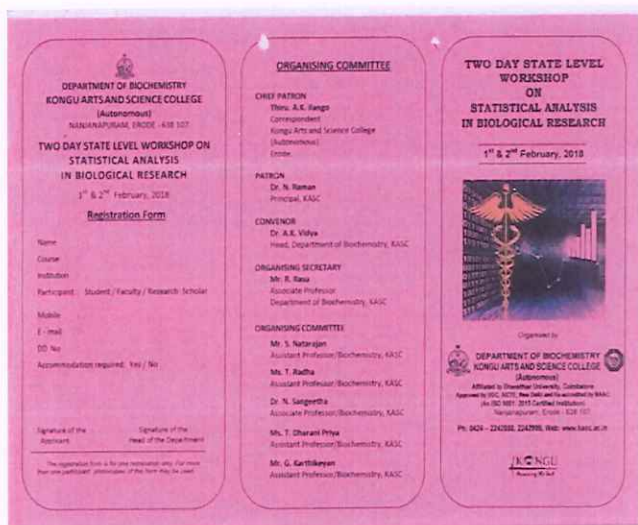


**KONGU ARTS AND SCIENCE COLLEGE (AUTONOMOUS), ERODE**  
**DEPARTMENT OF BIOCHEMISTRY**

**Two-Day Workshop on**  
**“Biostatistical Analysis on Biological Research”**

01.02.2018 & 02.02.2018

**REPORT**



Statistical analysis is the collection and interpretation of data in order to uncover patterns and trends. It is a component of data analytics. Statistical analysis can be used in situations like gathering research interpretations, statistical modeling or designing surveys and studies. Statistics is the study and manipulation of data, including ways to gather, review, analyze, and draw conclusions from data.

To encourage the students to go with statistical analysis a Two-Day Workshop on “Biostatistical Analysis on Biological Research” was organized by our department for the benefit of PG students and Research scholars on 01.02.2018 & 02.02.2018. Dr. R. Parvathi, Associate Professor and Head, Department of Mathematics, Vellalar College for Women, Erode and Dr. G. Sudha, Associate Professor and Head i/c, Department of Biochemistry, Periyar University, Salem served as Resource person. 54 participants from various colleges attended the workshop

*Dr. A. Jayaraj*  
**HEAD OF THE DEPARTMENT**  
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