KONGU ARTS AND SCIENCE COLLEGE

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

ERODE – 638 107

PROGRAM NAME

B.Sc. (Biotechnology)

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2018-2019

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SYLLABUS

Semester	Course Code	Core Paper IV Biochemistry	Total Marks:100		Hours Per Week	Credits
III	17UAQCT301		CIA: 25	ESE: 75	5	4

Objectives:

- To understand the structure, function and metabolism of biomolecules
- To attain knowledge about enzymes and their mechanism.

Course Outcome:

On successful completion of the course, the students will be able to:

CO1 Improve the basic knowledge of carbohydrates and lipids

CO2 Describe the fundamental organization of proteins and nucleic acids

CO3 Interpret their ideas related to enzymes

CO4 Outline the metabolic pathways of macromolecules

CO5 Summarize the metabolic pathways of macromolecules and inspect the concepts in micro elements

UNIT I

Carbohydrates: Classification, structure and functions of monosaccharides (trioses, tetroses, pentoses and hexoses), disaccharides (lactose, sucrose, maltose, cellobiose), polysaccharides (starch, glycogen, cellulose, hemicellulose, heparin and chondrotin sulphate).

Lipids: Structure, nomenclature and functions of fatty acids (saturated and unsaturated) Classification (simple, derived and compound) and uses of lipids, physical and chemical properties of lipids.

UNIT II

Amino acids and Proteins: Structure, classification and properties of amino acids. Peptides, oligopeptides and polypeptides. Classification of proteins based on structure, function and composition. Levels of organization of proteins - primary, secondary, tertiary and quaternary structures.

Nucleic acids: Composition and structure of nucleic acids.

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UNIT III

Enzymes: General properties, IUB classification of enzymes, active site - Lock and Key model, Koshland's induced fit hypothesis. Factors affecting enzyme activity (temp, pH, substrate concentration). Enzyme kinetics: Michalis - Menton equation, Line Weaver - Burke Plot. Regulation of enzyme activity: allosteric enzymes- positive and negative cooperativity. Enzyme inhibition – reversible (competitive, noncompetitive and uncompetitive) and irreversible. Co-enzymes, cofactors and vitamins.

UNIT IV

Carbohydrate Metabolism: Glycolysis (including aerobic and anaerobic fermentation), TCA cycle, gluconeogenesis, glycogen breakdown, ETC and oxidative phosphorylation, Pentose-phosphate pathway (sequence of reactions & regulation).

Lipid Metabolism: Oxidation of fatty acids (alpha and beta oxidation), Biosynthesis of cholesterol.

UNIT V

Aminoacid metabolism: Amino acid deamination, Urea cycle, Outline scheme for amino acid breakdown and synthesis.

Nucleotide Metabolism: Biosynthesis of purine and pyrimidine (de novo and salvage pathway), degradation of purine and pyrimidine.

Minerals: Source, distribution, daily requirements, physiological functions and absorption of macronutrients (sodium, potassium, calcium, phosphorus) and micronutrients (iron and iodine).

TEXT BOOK

U.Satyanarayana, Biochemistry, II Edition, Arunabha Sen Publication, Kolkata, 1999.

REFERENCES

1. A.C.Deb, Fundamentals of Biochemistry, VIII Edition, New Central Book Agency, Kolkata, 2002.
2. Zubay L Geoffery, Principles of Biochemistry, III Edition, Wm.C. Brown Publishers, USA, 1993.
3. Lehninger L.Albert, Biochemistry, II Edition, Kalyani Publishers, New Delhi, 1998.
4. Voet et al., Principles of Biochemistry, IV Edition, John Wiley and Sons, Asia, 2012.
5. Dr. Rithambhara Richharia & Anil Richharia, Biotechnology and Biochemistry, Ramesh Publishing House, New Delhi, 2003.

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

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Semester	Course Code	Core Paper V	Total Marks:100		Hours Per Week	Credits
		Genetics	CIA: 25	ESE: 75		
III	17UAQCT302				4	4

Objectives:

- To have graduates with high knowledge in the field of Genetics
- To become familiar with the advents of genetic development.

Course Outcome:

On successful completion of the course, the students will be able to :

CO1 Summarize the Basic concepts of Genetics

CO2 Generate their perception with genetic interactions

CO3 Develop their knowledge in chromosomal linkage and crossing over

CO4 Outline on various chromosomal variations

CO5 Show the deep approaching ideas in population genetics

UNIT I

Mendelian Principles: Definition, history and scope of Genetics, general areas of Genetics (Classical, Molecular and Evolutionary). Basic concept of Genetics - Allele, Locus, Gene, Genome, Haplotype, Genotype, Phenotype. Model organisms in Genetics. Mendel's Law: Law of Dominance - Monohybrid cross, Law of Independent Assortment - Dihybrid cross, Trihybrid cross, Test cross and Back cross. Allelic gene interaction: complete dominance, partial or incomplete dominance, co-dominance, Multiple Alleles (ABO blood groups and Rh factor), Lethal alleles, penetrance and expressivity, pleiotropism.

UNIT II

Gene Interactions: Non allelic gene interaction: Epistasis (Dominant, Recessive, Duplicate recessive), complementation, polygeny. Sex determination - Chromosomal, Genetic, and environmental sex determining systems. Extranuclear inheritance – mitochondrial and chloroplast genes and maternal inheritance. Genetic control in development of Drosophila and Arabidopsis.

UNIT III

Linkage and Crossing over: Linkage, Sutton's view on linkage, Morgan's view on linkage, Bateson & Punnet's Coupling and Repulsion hypothesis. Chromosome theory of Linkage, kinds of linkage, linkage groups, types of Crossing over, mechanism of Meiotic Crossing over, significance of Crossing over. Haploid mapping (2 point and 3 point cross), Diploid mapping (Tetrad analysis), determination of map distance, determination of gene order.

UNIT IV

Chromosomal variation in Number and Structure: Euploidy, Aneuploidy - Aneuploid segregation in plants, Aneuploidy in Human, Polyploidy in Plants and Animals, Induced Polyploidy, applications of Polyploidy, Chromosomal Mosaics, Deletion, Duplication, Inversion, Translocation, Position Effect, Centromeric and Non-centromeric breaks in chromosomes. Single gene disorders – Autosomal dominant (Huntington), Autosomal recessive (cystic fibrosis), X linked trait (muscular dystrophy).

UNIT V

Population Genetics: Genetic variation – Genotypic frequency, Allelic frequency, Random and Non-random mating, Hardy Weinberg law, calculating gene frequencies, changes in allelic frequency (Genetic drift, Natural Selection, Migration, Genome evolution). Pedigree Analysis – Symbols of Pedigree, Pedigrees of Autosomal recessive, Autosomal dominant, X linked recessive and X linked dominant traits. Twin studies, Genetic screening – prenatal and postnatal testing and Genetic counseling.

TEXT BOOK(S)

Dr. P.S. Verma and Dr. V.K. Agarwal, Cell Biology, Genetics, Molecular Biology, Evoluution and Ecology I Multicolour Edition, S.Chand and Company, New Delhi, 2014

Benjamin A.Pierce, Genetics- A conceptual Approach, II Edition, W.H.Freeman and Company, New York, 2005.

REFERENCES

1. A.V.S.S. Sambamurty, Genetics, II Edition, Narosa Publication, New Delhi, 2005
2. L.D.Vijendra Das, Genetics and Plant Breeding, Revised II Edition, Newage International Pvt.Ltd, New Delhi, 2005.
3. S.B. Basu and M.Hossain, Principles of Genetics, Books and Alied Pvt. Ltd, Kolkatta, 2006.
4. Gardnar *et al*., Principles of Genetics, VIII edition, Wiley India, New Delhi.2008
5. D. Peter Sunstad and Michael J.Simmons, Genetics, VI Edition, John Willey and Sons Inc, Singapore, 2012.

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

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Semester	Course Code	Allied Paper – III	Total Marks: 75		Hours Per Week	Credits
III	17UAQAT303	Biomathematics	CIA:20	ESE:55	4	3

Objective:

- To enable the students to understand the concepts of Mathematical and Statistical results and to develop sufficient knowledge to apply in their further studies.

Course Outcome:

On successful completion of the course, the students will be able to

CO1 Apply the concepts of binomial and exponential theorems in summation of series.

CO2 Solve the problems using Matrices.

CO3 Describe different types , collection and presentation of data.

CO4 Determine the measures of central tendency and dispersion.

CO5 Apply Correlation and Regression in statistical analysis.

UNIT I

Binomial and Exponential theorems (Statement only) -Application to summation of series – Simple Problems.

UNIT II

Matrices – Types of Matrix – Operations – Matrix Multiplication - Inverse of a matrix- Rank of Matrix –Linear Equations by Matrix method – Simple Problems.

UNIT III

Statistics: Meaning and Scope- -Collection of Data-Primary and Secondary data - Methods of collecting Primary and Secondary Data-Classification and Tabulation- Presentation of data by Diagrams-Bar diagram and Pie diagram - Graphic Representation of Frequency Distribution.

UNIT IV

Measures of Central Tendency: Mean, Median and Mode - Geometric Mean and Harmonic Mean (simple problems only).

Measures of Dispersion: Range, Quartile Deviation, Standard Deviation and Co-efficient of Variation.

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UNIT V

Correlation: Meaning–Scatter Diagram-Karl Pearson's Co-efficient of Correlation-Spearman's Rank Correlation.

Regression Analysis: Meaning of Regression–Regression in Two Variables- Difference between Correlation and Regression.

TEXT BOOK(S)

1. P.Kandasamy and K.Thilagavathi, "Allied Mathematics", Paper- I First Semester . S.Chand and Company Ltd, New Delhi, 2003.

   UNIT I: Page No. 8-27.

   UNIT II : Page No. 72-106.

2. P.A Navnitham, "Business Mathematics & Statistics", Jai Publishers, Trichy, 2011.

   UNIT III : Chapter 1,3,5,6 : Pages 1 – 5, 9-17, 28-39,61-64, 83-91, 99-119, 131-146

   UNIT IV : Chapter 7,8 :Pages 159- 183, 196-209, 212-227, 251-260, 301 -310, 325-340

   UNIT V : Chapter 12,13 : Pages 503-508, 518-522, 540-554, 563-569

REFERENCES

1. R.S.N.Pillai and Bagavathi, " Statistics theory and practice", Jai Publishers, Trichy 21, 2013.
2. P.R.Vittal, " Allied Mathematics", Margam Publications, Chennai , 2002.
3. Jerrold H.Zar, " Biostatistical Analysis", Pearson Education, 4th Edition, 1999.
4. S.Prasad, "Elements of Biostatistics",Rastogi publications, Meerut, 2005.
5. P.Raja , " Mathematics and Biostatistics", Subash Publications, 1999.

SECTION – A	SECTION – B	SECTION – C
10x1=10 Marks (Multiple choice, Four options) Two questions from each unit	**5 x 3 = 15 Marks** (Either or choice) Two questions from each unit	**3x10 = 30 Marks** (Answer any three questions) One question from each unit

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Semester	Course Code	Skill Based Subject-I	Total Marks:75		Hours Per Week	Credits
III	17UAQSP304	Lab in Quality Control Techniques	CIA: 30	ESE: 45	3	3

Objectives:

- The student should acquire technical skills on quality analysis of various house hold products.

Course Outcome:

On successful completion of the course, the students will be able to:

CO1 Improve their knowledge in concepts of pH and microbiological methods effectively

CO2 Illustrate the knowledge in the quantitative estimations

CO3 Develop the skill in qualitative analysis of soil

CO4 Estimate the quality of household products

CO5 Expertise their knowledge in adulteration

1 Introduction to safety standards-Theory

2 Determination of acidity and alkalinity of food samples

3 Microbiological analysis of drinking water

4 Determination of iron content in water

5 Determination of chromium content in water

6 Determination of nitrogen in soil

7 Determination of potassium in soil

8 Determination of casein and calcium from milk

9 Determination of adulterant in milk products

10 Determination of iodine and saponification value of oil

11 Determination of adulterant in oils

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REFERENCES

1. N. Kanan, Laboratory manual in General Microbiology, Panima Publishing Corporation. 2002.

2. S.Sadasivam and A.Manickam, Biochemical methods. II edition, New Age International. India, 1996

3. https://www.thebetterindia.com/114412/simple-home-tests-food-adulteration-kitchen-ingredients/

4. http://www.downtoearth.org.in/news/how-to-check-if-your-milk-is-adulterated-57584

QUESTION PAPER PATTERN					
Major Expt	**Minor Expt**	**Set up**	**Spotters**	**Viva voce**	**Record**
1 x 12= 12 Marks	**1x8=8 Marks**	**1x6=6 Marks**	**5x2= 10 Marks**	**4 Marks**	**5 Marks**

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Semester	Course Code	Core Paper VI Molecular Biology	Total Marks:100		Hours Per Week	Credits
IV	17UAQCT401		CIA: 25	ESE: 75	4	4

Objectives:

- To obtain adequate knowledge of genome at molecular level.
- On successful completion of the subject, the student should have understood the molecular aspects of replication, transcription, translation and repair mechanism.

Course Outcome:

On successful completion of the course, the students will be able to:

CO1 Interpret their knowledge about gene and its organization

CO2 Describe the mechanism of transcription

CO3 Develop their knowledge in translation and its related process

CO4 Categorize the different modes of mutation

CO5 Perceive about the DNA repair and Recombination process

UNIT- I

Organization of Gene: Fine structure of gene, split genes, pseudogenes, overlapping genes and multigene families. Experiment to prove semiconservative mode of replication. DNA replication in prokaryotes and eukaryotes. Types - unidirectional, bidirectional and theta model replication. Enzymology of replication.

UNIT II

Transcription: Co linearity, Transcription in prokaryotes and eukaryotes, post transcriptional modifications (mRNA, tRNA, rRNA), transcriptional regulation in prokaryotes (operon concept - lac operon) and eukaryotes, inhibitors of transcription. Elucidation of genetic code.

UNIT – III

Translation: Translation of protein, post translational modifications, folding of newly assembled polypeptides, translational regulations, signal sequences and protein export to mitochondria, chloroplast, nucleus and plasma membrane.

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UNIT – IV

DNA Mutation: Biochemical basis of mutations, types of mutations (spontaneous and induced, somatic and germinal). Complementation test. DNA damage - physical and chemical mutagens. Ames test for mutation. Significance and practical applications of Mutation. DNA repair mechanisms- direct reversal. Excision repair (base excision, nucleotide excision and mismatch), recombinational repair; SOS response and SOS bypass.

UNIT – V

Transposable elements and Recombination: Transposable elements in Prokaryotes and Eukaryotes. Genetic exchange – bacterial transformation, transduction, conjugation and their mapping. Recombination - Homologous and non-homologous recombination, site-specific recombination.

TEXT BOOK

Ajoy Paul, Text Book of Cell and Molecular Biology, II Edition, Books and Allied Ltd, Kolkata, 2007.

REFERENCES

1. D.L. Hartl, Basic Genetics, Jones & Bartett publications, 1991.
2. Friefelder, Microbial Genetics, Jones & Bartnett publications, 1987.
3. Watson *et a*l Molecular Biology of the gene, IV Edition, The Benjamin/ Cummings co, 2007.
4. Lodish, Molecular Cell Biology, Baltimore Scientific American Brocks, 1994.
5. Gerald Karp, Cell and Molecular Biology, Wiley International edition, 2004.

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

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Semester	Course Code	Core Practicals II - Lab in Biochemistry	Total Marks:100		Hours Per Week	Credits
IV	17UAQCP402		CIA: 40	ESE: 60	3	4

Objectives:

- On successful completion of the practical the student should have experience in handling microorganisms, identification and characterization of them.

Course outcome:

On successful completion of the course, the students will be able to:

CO1 Develop the skills in qualitative analysis

CO2 Maximize their knowledge in the quantitative analysis

CO3 Can efficiently perform estimation procedures

CO4 Will be able to analyze biomolecules

CO5 Improve their knowledge in separation of biomolecules

1. Qualitative analysis of carbohydrates
2. Qualitative analysis of aminoacids
3. Estimation of Sugars by Anthrone method
4. Estimation of total free amino acids - Ninhydrin method
5. Estimation of Protein - Lowry's method
6. Estimation of DNA - DPA Method
7. Estimation of RNA - Orcinol method
8. Estimation of cholesterol - Zaks method
9. Determination of Acid Value of Fats
10. Quantification of Vitamin C by Dye method
11. Separation of biomolecules by Paper and Thin layer Chromatography

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REFERENCE

S.Sadasivam and A.Manickam, Biochemical methods, II edition, New Age International, India, 1996

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QUESTION PAPER PATTERN

Major Expt	Minor Expt	Set up	Spotters	Viva voce	Record
1 x 15= 15 Marks	1x12=12 Marks	1x8=8 Marks	5x3= 15 Marks	5 Marks	5 Marks

Semester	Course Code	Allied IV- Computer and Information Technology	Total Marks:75		Hours Per Week	Credits
IV	17UAQAT403		CIA: 20	ESE: 55	4	3

Objective:

- To impart the knowledge about Windows XP and the features of MS-Office 2007.

Course Outcome:

At the end of the course, the students will be able to:

CO1 Describe the features and components of windows XP

CO2 Perform documentation with various formatting in MS-Word 2007

CO3 Compute calculations and generate charts in MS-Excel 2007

CO4 Illustrate the presentation skills in MS-PowerPoint 2007

CO5 Create Database, Table, Query, Forms and Reports

UNIT – I:

Windows XP: Introduction – Features of Windows XP - Getting started – working with windows – Start menu and the Task bar – Windows Explorer – Files and Folders – The control panel – Accessories.

UNIT – II

MS-Word2007: Introduction – MS word 2007- Getting started with MS word2007 – Microsoft office button – Quick Access Toolbars – Working with documents – Page formatting – Macros.

UNIT - III

MS-Excel 2007: Introduction – Getting started with MS Excel 2007 – Spreadsheets – Microsoft office button – Ribbon – Quick Access Toolbar – Creating a workbook – Data – Modifying a worksheet – Calculation – Relative, Absolute and Mixed references – Formatting Worksheet – Page properties and printing.

UNIT – IV

MS-PowerPoint 2007: Introduction – MS PowerPoint 2007 - Getting started – Microsoft office button – Ribbon – Quick Access toolbar – Customize – Creating a presentation – Slide effects – Transition – Animation – Printing.

UNIT – V

MS-Access 2007: Introduction – Microsoft office button – Navigation Pane – Tabbed document window viewing – Ribbon – Quick access toolbar – Customize – Database – Creating a new database – Create a table – Data types – Manage table – Primary keys – Managing data – Query a database – Query wizard – Create a form - Generating reports – Print a report.

TEXT BOOKS:

Sanjay Saxena, A First Course in Computers Based on Windows and Office XP. Second Edition, 2010. (Unit – I)

Sanjay Saxena, MS- Office 2007 in a Nutshell, Vikas Publishing House Pvt Ltd., 2011 (Unit – II, III, IV, V)

REFERENCES:

1. Kogent Solutions Inc., Office 2007 in simple steps, Dreamtech publishing, 2009.

2. Joyce Cox, Cutris Frye, M. Dow Lambert III, Steve lambert, John Pierce, Joan Preppernau: 2007 Microsoft Office System Step by Step, PHI, Second edition, 2010

SECTION – A	SECTION – B	SECTION – C
10x1=10 Marks (Multiple choice, Four options) Two questions from each unit	**5 x 3 = 15 Marks** (Either or choice) Two questions from each unit	**3x10 = 30 Marks** (Answer any three questions) One question from each unit

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Semester	Course Code	Allied Practicals II- Computer and Information Technology Lab	Total Marks:50		Hours Per Week	Credits
IV	17UAQAP404		CIA: 20	ESE: 30	2	2

Objective

- To impart the knowledge about MS-Office 2007.

Course Outcome:

At the end of this course, the students will be able to:

CO1 - CO4 Create letter heads, resume, timetable and mail merging of letters in MS-Word

CO5 - CO7 Prepare Student Mark list and generate Charts and Reports in MS-Excel

CO8 - CO9 Demonstrate presentation with simple and animated effects in MS-Power Point

CO10 – CO12 Create Database, Tables, Query, Forms and Reports in MS-Access

I MS Word 2007

1. Create a Company letter head
2. Prepare a curriculum vitae
3. Generate Class time table using Table facilities
4. Create a letter to attend the interview using Mail merger

II MS Excel 2007

5. Create and analyze the students' marks using formulas and various charts.
6. Create a worksheet to manipulate various formatting options.
7. Create a report containing the pay details of the employee.

III MS Power Point 2007

8. Create a simple presentation.
9. Imply different animation and transition effects in presentation.

IV MS Access 2007

10. Creation of simple table and query
11. Creation a form to add, modify, delete records in a table
12. Create a table, queries and prepare reports to display the information

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Semester	Course Code	Advanced Learners Course:	Total Marks:100		Hours Per Week	Credits
IV	17UAQAL408	Stem Cell Biology	CIA: -	ESE: 100	-	2

Objectives:

- The course will provide students with knowledge of wide ranging topics related to stem cells, technological advancements and potential applications of stem cells.

Course Outcome:

On successful completion of the course, the students will be able to:

CO1 Build their knowledge about stem cells and their classification

CO2 Express their knowledge in stem cell culturing and characterization

CO3 Develop their perception in stem cell types

CO4 Interpret about the stem cell therapeutic application

CO5 Maximize their knowledge in stem cell research

UNIT- I

Introduction to stem cells: Definition, Classification, Characteristics, Differentiation, Stem cell niche, Stem cell Vs Somatic cells. Mechanism of pleuripotency in stem cells.

UNIT – II

Basic culture procedures: Isolation, culture methods, identification, stem cell markers, feeder layer, instrumentation in stem cell biology.

UNIT – III

Different kinds of stem cells: Adult stem cells, embryonic stem cells, embryonic germ cells, hematopoietic stem cell, neural stem cells, muscle stem cells. Cardiac stem cells, umbilical cord blood stem cells, cancer stem cells, mesenchymal stem cells, induced pluripotent stem cells

UNIT – IV

Therapeutic applications of Stem cells: Neurodegenerative disorders, cardiac disorders, regeneration of epidermis, bone and skin, etc. Stem cells in health care. Animal model for regeneration of stem cells.

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UNIT –V

Stem cell therapy: Stem cell banking. Current status of stem cell research and ethical issues.

REFERENCES

1. Cooper, Hausman, The cell a molecular approach, IV Edition, ASM press, Washington, 2007.
2. Campbell, Reece, Biology, VI Edition, Benjamin Cummings, Newyork, 2002.
3. Alberts, Bray, Lewis, Roberts, Ruff, Watson, Molecular biology of the cell, III Edtion, Garland publing inc, Newyork and London, 1983.
4. Dr.H.K. Das, Text book of biotechnology, II Edition, Willey India Pvt.Ltd, New Delhi, 2005.
5. Lotish, Berk, Zipursky, Derneu, Baltomote, Molecular cell biology, IV Edition, W.H. Freeman and company, England, 2000.

REFERENCE SITE

Stem cells: Scientific progress and future research directions- NIH report.

Available @ www.stemcells.nih.gov/index, www.stembook.org.

QUESTION PAPER PATTERN		
SECTION - A	**SECTION - B**	**SECTION - C**
10 x 2 = 20 Marks (Answer any 10 question out of 12 questions)	**5 x 7 = 35 Marks** (Either or choice) Two questions from each unit	**3 x 15 = 45 Marks** (Answer any three Questions) One question from each unit

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ACTIVITIES

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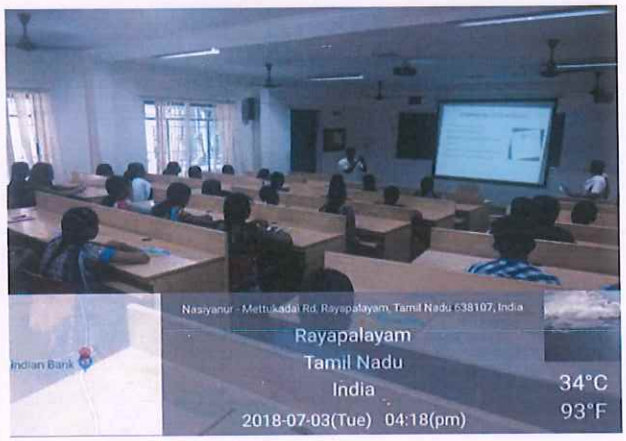
DEPARTMENT OF BIOTECHNOLOGY

ORIENTATION PROGRAMME
REPORT



An **Orientation programme** was organized for I B.Sc Biotechnology Students on 02.07.18 and 03.07.2018 and faculty members of our college handled sessions in various topics such as Curriculum aspects and Examinations, Soft Skills, Conduct and Behavior, Life Science and Economy, Finance for Non Finance Executives, Ways to Develop - Inside and Outside College and Introduction to KASC Clubs and Forums.

The session was much valuable and it gave vast knowledge on curriculum, the importance of behavior and also the ways to develop individually. The staffs gave an detailed explanation about the topic. Teaching technique is more understandable and help to learn new ideas.More inspirative talk made to think about the side of research .

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DEPARTMENT OF BIOTECHNOLOGY

DEPARTMENT INAUGRATION

REPORT

The **Department Inauguration** - Creauctus-18' was held on 13th July 2018,Dr.V.Thirunavukkarasu,Associate Professor,Department of Biotechnology,BharathiarUniversity,Coimbatore was the resource person.

The chief guest inaugurated the function and gave a wide talk on the emerging field of Biotechnology. Also the recent techniques and value of technology. He also implemented the usage of techniques in our lab. The students were happy and content with the knowledge he shared. The students asked many questions regarding Biotechnology applications.

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PERSONALITY DEVELOPMENT PROGRAMME

REPORT

Personality Development Programme was arranged for I B.Sc Students on 16.08.18 and Chief Guest of the programme was Mrs.Vidhyadevi Jayaprakash Psychologist, ManadhinMaiyam, Erode.

She talked about the importance of Personality to be maintained among the individuals. She explored the habits, character, good thoughts and kindness to spread between the students.The session was interactive and student were content with the information.

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HANDS ON TRAINING ON MUSHROOM CULTIVATION

REPORT

Hands on training Programme on **Mushroom Cultivation** for III B.Sc Biotechnology was arranged at Tamilnadu Agricultural University, Coimbatore on 20.08.18.

The students and one faculty member attended the training programme. TNAU had given hands on training to the students. They were exposed to fungal spores and also visited the place where mushroom was cultivated. The students after the visit had a deeper knowledge on mushroom cultivation. Also they were intended to propagate the technique at their home.

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KONGU
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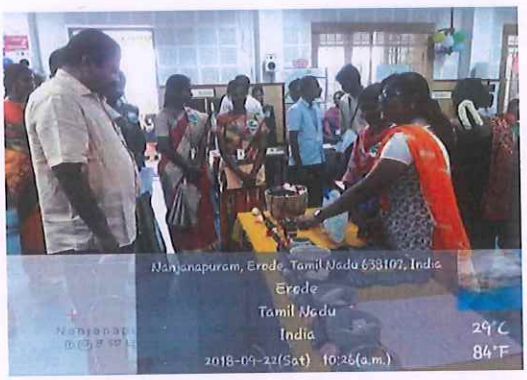
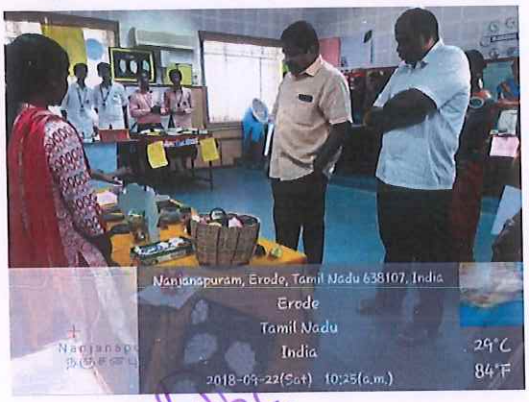
BIOFAIR

REPORT





The **Health Club**asa part of Creauctus Association organized **'BIOFAIR'**an Exhibition Cum Sale of Natural and Value Added Biological Productson 22.09.18. Chief Guest - Dr. G. Sivaraman B.S.M.S., Ph.D., Chief Siddha Physician, Arogya Healthcare, Chennai accompanied the function.

He had a trip to Biofair and was amazed with the students' activity. He interacted with the products and models which the students displayed. He enquired the students regarding their interest towards natural products which is going to be tomorrow's solution.

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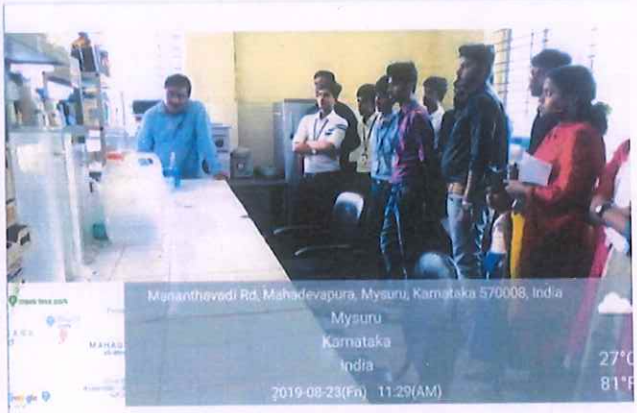
INDUSTRIAL VISIT

REPORT



An **Industrial Visit** was arranged for the II and III Year Students to Indo-American Hybrid Seeds (India) Pvt Ltd., (IAHS), Bangalore on 28.09.18 & 29.09.18

The students of Biotechnology really admired about the development of seeds from past to today's hybrid technology. Also they interacted with the Research people and clarified their doubts regarding hybrid seed.

Personality Development Programme was arranged for III B.Sc Students on 28.09.18 (AN) at Indo-American Hybrid Seeds (India) Pvt Ltd (IAHS), Bangalore and the Resource Person was Mr. Madhusudhanan, Head, Plant Biotechnology, IAHS, Bangalore.

The resource person gave recent talks on hybrid seeds and the climatic conditions of different regions of India. The importance of hybrid seed for today's farmers to get the yield rapidly. Also insisted the role of Biotech students to acquire deeper knowledge on this technology.

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GUEST LECTURE – PLANT BREEDING AND PLANT TISSUE CULTURE

REPORT

A **Guest lecture** on Plant Breeding and Plant Tissue Culture was arranged for II BSc Biotechnology Students on 28.09.18 (FN) at IAHS, Bangalore

Resource person, Mr.S.B.Jayachandran, Consultant, IAHS, Bangalore had accompanied the session.

The session highlighted upon the future prospects of Plant Tissue Culture and its application. The guest conveyed the message of lab facilities available for Plant Breeding. He also commented on the recent research work. The session was interactive with informations.

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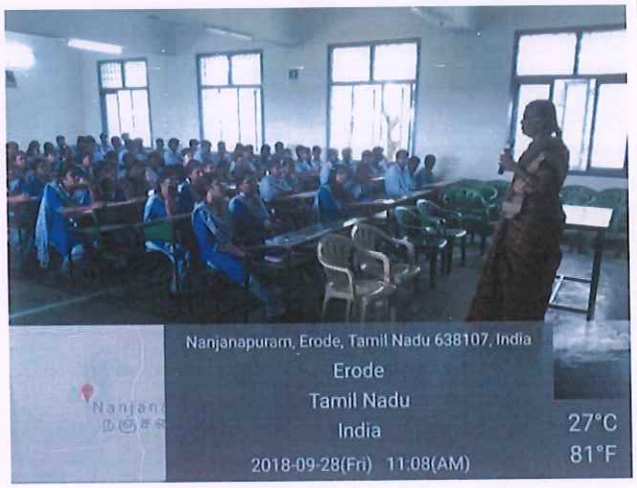
GUEST LECTURE – PHYSICAL CHEMISTRY

REPORT



Guest lecture on **Physical Chemistry** was arranged for I B.Sc Biotechnology and Physics Students on 28.09.18. Resource Person: Ms. S.Krishnaveni, Assistant Professor, Department of Chemistry, L.R.G. Govt. Arts College for Women, Tirupur.

The guest talked more on combination of physics and chemistry. She was conveying about the properties and structure of chemicals used commercially. She shared her experience of research to the students. Both Biotech and Physics students were cumulated with information and the session was effective.

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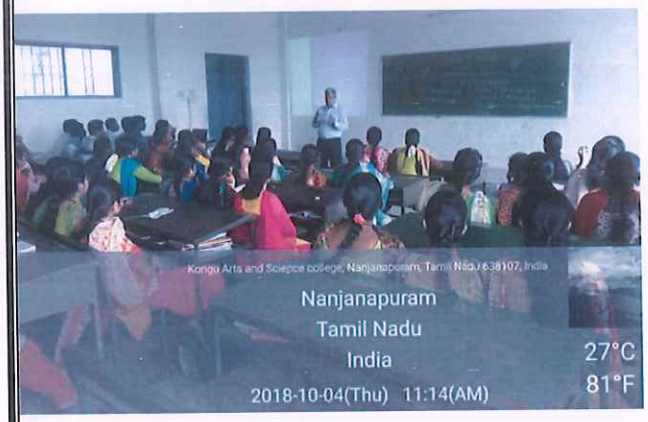
GUEST LECTURE – MATHEMATICAL MODELING

REPORT



Guest Lecture on **Mathematical Modeling** was arranged for II B.Sc Biotechnology Students on 04.10.18. Resource Person: Dr. S.Nagarajan, Associate Professor and Head, Department of Mathematics, KASC.

The resource person was highly knowledgeable in calculative problems. He shared his experience of models which he came across in his field. The student enjoyed the session and both guest and students worked out many problems and solved with satisfaction.

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FARM VISIT – GOLDEN BIO CULTURES

REPORT

Farm Visit was arranged for I Year Students to **Golden Bio Cultures**, Erode where the students were exposed to Biofertilizers, Composting and Fermentation technology on 26.12.18.

Biofertilizers are prominent and it's the todays and future solution to the soil and ecosystem. Students of Biotechnology were amazed and content when they were practically to the farm. They were in soil and learnt much on composting, importance of earthworm and also their future role as a citizen about recycling.

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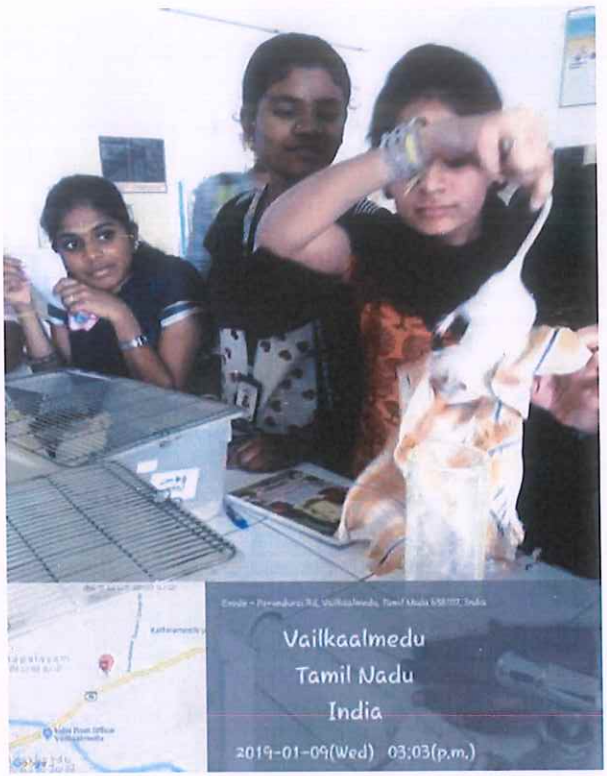
WORKSHOP – ANIMAL HANDELING

REPORT



Workshop on **Animal Handling, Bioethics and IPR** was arranged for III Year Students at Nandha College of Pharmacy, Erode on 09.01.19

The students learnt on to handle the animals, differentiated with different types of mouses like Wistar rats,Sprague Dawley rats, guinea pigs and rabbits.

They were advised to feed the animal with food and drugs. They also practiced to draw blood from animals. The students after the workshop were happy and learnt the handling techniques.

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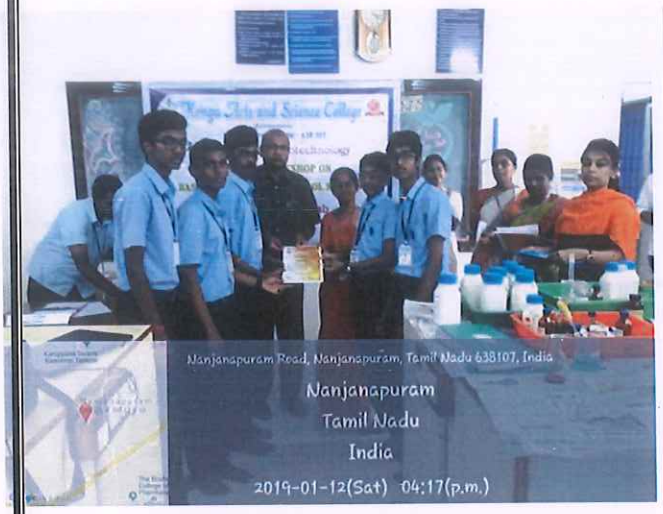
WORKSHOP ONBASIC CHEMISTRYFOR SCHOOL STUDENTS

REPORT



The Department of Biotechnology organized One Day **Workshop onBasic Chemistryfor School Students** on 12.01.2019.

Students from five different Schools in and around Erode participated and got practical experience. The students visited the lab and visualized the Instruments and Himedia chemicals with much interest. They were also practically guided and learnt on the basic structures and properties of few chemicals. The session was useful to the school students.

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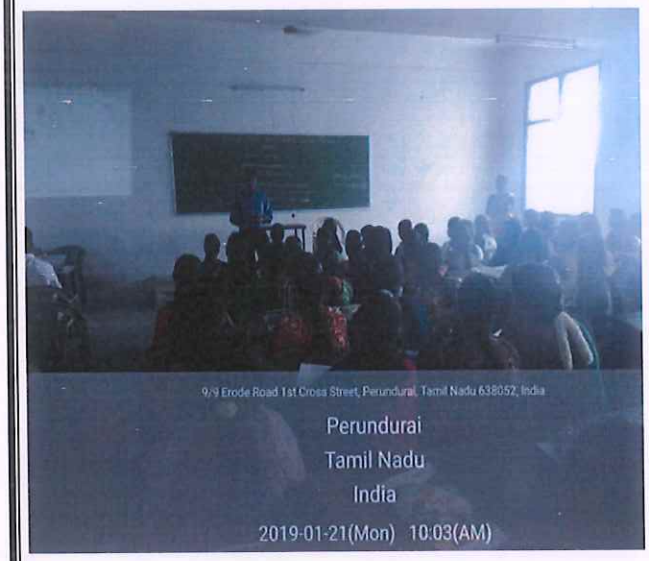
GUEST LECTURE - INTRODUCTION TO MEDICAL TRANSCRIPTION & ITS CAREER OPPORTUNITIES

REPORT



Guest Lecture on **Introduction to Medical Transcription & its Career Opportunities** was arranged for II & III Year Students on 21.01.19 and the lecture was handled by Mr.V.K.Venkatachalam, Health Care Documentation Specialist, M Model Global Services Pvt. Ltd., Coimbatore.

The guest delivered his lecture regarding importance and applications of Medical Transcription, abbreviations used in medicine,Medcal legal problems, coding in detail. The students were interested to learn new terms and also raised many questions regarding the future benefits of Medical Transcription.

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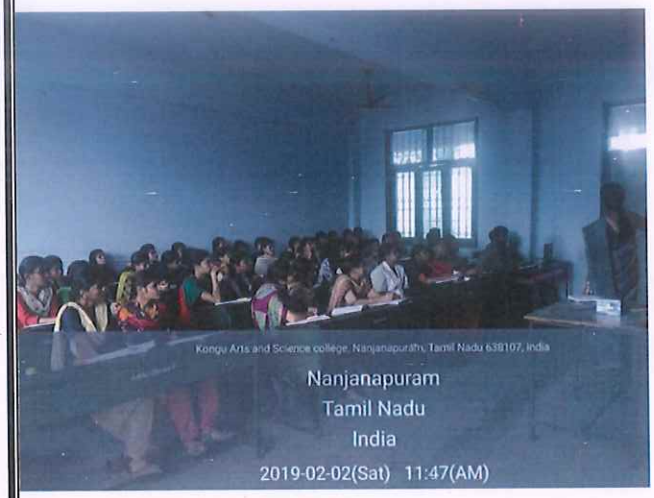
GUEST LECTURE – BIOINFORMATICS

REPORT



Guest Lecture on **Bioinformatics** was arranged for III Year students and the session was handled by Dr. N.Sangeetha, Associate Professor, Department of Biochemistry, KASC on 02.02.19

The resource person explored the new tools used in this technology. She gave detailed explaination about emerging trends in Bioinformatics. She also discussed briefly on Docking studies and its role in research. The students gained much knowledge on this program.

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CLINICAL LABORATORY VISIT

REPORT

Clinical Laboratory Visit was arranged for I Year Students to **Deepa Micro Lab**, Erode on 02.02.19 to have an exposure on Microbiological techniques.

The students visited the lab with all procedures given by the hospital. They were thought about the bacteria and fungi strains. The students were exposed to new hi-tech microscopes, different staining techniques, and few diagnostic protocols were also discussed. The biotech students were enriched with information on microbes.

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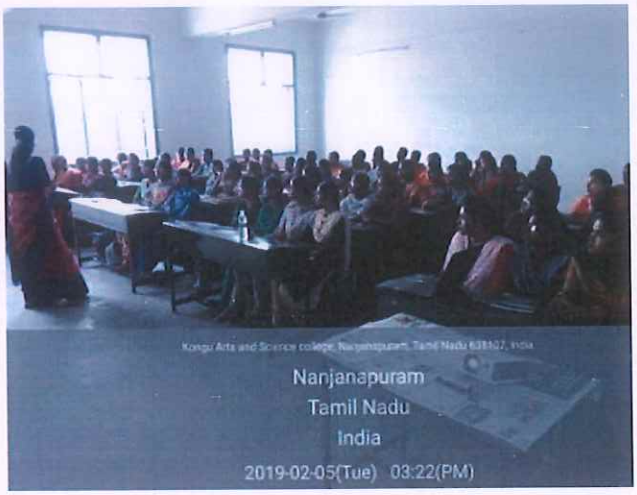
HEALTH CLUB

REPORT



Health Club as a part of Creauctus Association organized a Special talk on **Health Awareness In Girls** (HAI Girls!) for II & III Year girl students on 05.02.19 and the talk was delivered by Jc. Jayanthi Rameskumar, Smart Kids, Erode.

The guest had narrowed her path on depth of diseases for girls. The prevention, diagnosis and treatment of menstrual disorder was discussed elaborately. The girls of Biotechnology were interested and asked many doubts. The session was useful to all girls and women staffs of Biotechnology.

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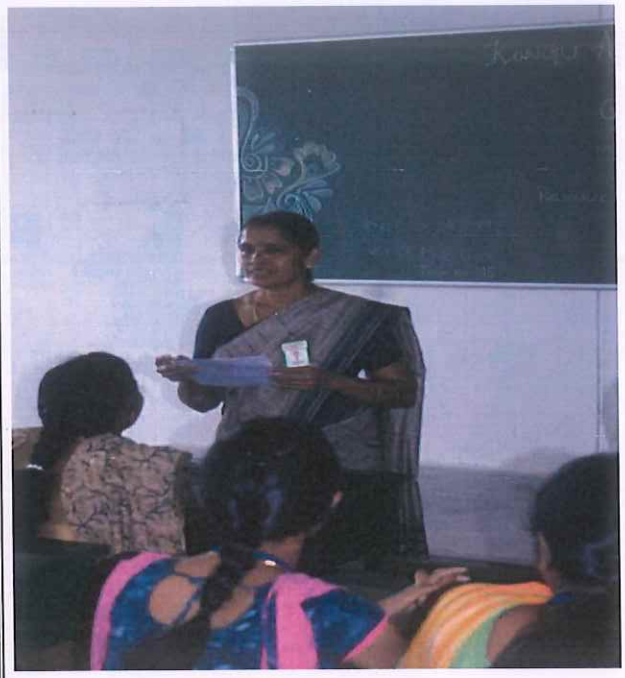
GUEST LECTURE - HUMAN RIGHTS

REPORT



Guest Lecture on **Human Rights** was arranged for I Year Students on 05.02.19 and the lecture was given by Dr.P.Poongodi, Professor and Head, Dept. of Management Science (PG), KASC

The guest discussed the laws and amendments of Human Rights. She enforced on child labour, sexusal abuse etc to be properly treated with Human rights. She discussed about the rights to be implemented in different types of situations. The session was informative to all.

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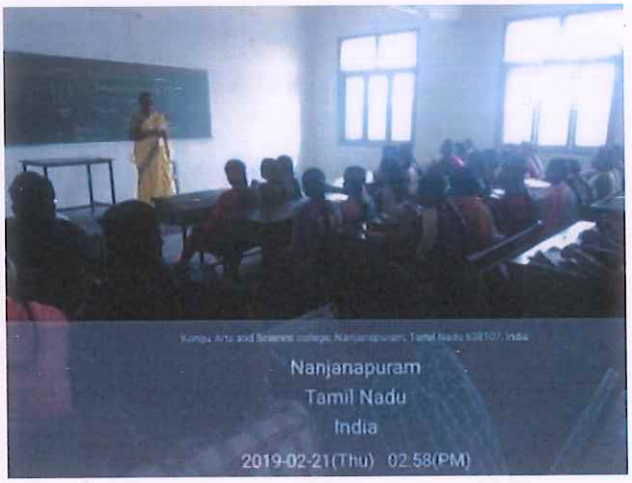
GUEST LECTURE - GENDER EQUALITY

REPORT



Guest Lecture on **Gender Equality** was arranged for B.Sc Biotechnology Students on 21.02.19

Resource person: Dr.V.Anbumani, Associate Professor and Head, Department of Hindi and Other Languages, KASC

The guest talked about the equality of male and female in today's World. Equal rights are given to both the genders, its problem in society, solution are discussed in the session. The session was interestingly proven in both the sectors.

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GUEST LECTURE AND PRICE DISTRIBUTION

REPORT

The Association concluded its activities for the current academic year with a Guest Lecture and prize distribution to students for various activities on 26.02.19. Chief Guest: Dr. T. Daniel ThangaduraiPh.D, Professor and Head, Department of Nano Science and Technology, Coimbatore.

The association activity of the academic year had been presented and the guest lectured on Nanotechnology importance and its applications.Todays research are widely related to nano studies, and he delivered the protocol for this new technology. Finally the session was completed with prize distribution for Biotech students for their achievements in various activities.

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