

THE OXFORD COLLEGE OF SCIENCE



Children's Education Society

Recognized by the Government of Karnataka, Permanently Affiliated to Bangalore University,
Approved by AICTE New Delhi, Accredited by NAAC with 'A' Grade in Cycle II & IAO Accredited by LSSSDC,
Recognized by UGC under section 2(f) & 12(B), Supported by DST under FIST Program,
Recognized by GoK for BiSEP (Formerly BTFS)



THE OXFORD SCIENCE SKILL ENHANCEMENT CENTRE (TOSSEC) OFFERS



SHORT AND LONG TERM
MODULES ON:

- HPLC
- FLUORESCENCE MICROSCOPE
- BIOINFORMATICS
- PCR
- ANALYTICAL TOOLS IN PHARMACEUTICAL INDUSTRIES
- ANIMAL CELL CULTURE



SERIES OF LECTURES ON:

- ANALYTICAL TOOLS IN PHARMACEUTICAL INDUSTRIES
- UPSTREAM PROCESS DEVELOPMENT
- APPLICATIONS OF PCR IN THE INDUSTRY
- FLUORESCENT MICROSCOPY IN DIAGNOSTICS
- BIOINFORMATICS



SHORT TERM & LONG TERM
PROJECTS IN COMMERCIALY VIABLE
AREAS:

- PHYTOCOMPOUNDS CHARACTERIZATION
- INDUSTRIAL ENZYMES
- FOOD TECHNOLOGY
- NEURO TOXICOLOGY



MASSIVE OPEN ONLINE COURSES ON:

- MASS SPECTROMETRY APPLICATIONS
- TRANSMISSION ELECTRON MICROSCOPY IN DIAGNOSTICS
- HPLC & IT'S APPLICATIONS
- FLUORESCENT MICROSCOPY IN DIAGNOSTICS
- TISSUE ENGINEERING & IT'S APPLICATIONS



BIO-SKILLATHON ON:

- MICROBIOLOGICAL SKILLS
- ANALYTICAL TECHNIQUE SKILLS
- BIOCHEMISTRY SKILLS
- BIOINFORMATICS SKILLS
- CELL & TISSUE CULTURE SKILLS
- MICROSCOPIC SKILLS

Workshop batches are conducted throughout the year based on student strength & requests. For requests & queries, contact the co-ordinators.

For further details contact:

- **Dr. Kavyashree R**, Principal, Professor and Head, TOSSEC Director.
- **Dr. Nirmala Nair**, Associate Professor, BiSEP Faculty, TOSSEC Co-ordinator.
- **Dr. Kavisa Ghosh**, Assistant Professor, TOSSEC Co-ordinator.
- **Dr. Mausam Ghosh**, Associate Professor, TOSSEC Co-ordinator.

Venue:

The Oxford Science Skill Enhancement Centre (TOSSEC), Department of Biotechnology,
The Oxford College of Science, Sector IV, HSR Layout, Bengaluru: 560 102, Karnataka, India.

For queries



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WORKSHOPS: SHORT AND LONG TERM MODULES



Short term module (Two days)

- Basic theory of chromatography and classification of HPLC
- RP HPLC dry demo (parts, function & applications)
- Practical demonstration of RP HPLC and mobile phase preparation
- Method development & validation, and troubleshooting

Long term module (Five days)

- Basic theory of chromatography and classification of HPLC
- RP HPLC dry demo, IPQC/concentration and charge variant analysis; HPLC sample purity analysis
- Peptide mapping and glycan analysis
- Method development & validation, and troubleshooting



Short term module (Two days)

- Fluorescent microscopy- overview & safety instructions
- Focusing the slides
- Capturing images and processing
- Post analysis waste and hazard management

Long term module (Four days)

- Fluorescent microscopy- the journey of a cell from bench to book; Hands on training on fixing and staining cells
- Probing cells with fluorescent antibody and mounting on slide
- Visualization of cells, capturing and processing of image



Short term module (Two days)

- Exploring nucleotide & protein databases- GENBANK & UNIPROT; Multiple sequence alignment
- Protein search using BLAST & computing phylogenetic tree
- Protein secondary structure prediction by PSIPRED

Long term module (Four days)

Exploring nucleotide & protein databases; RCSB & PDB; Pairwise sequence alignment by dynamic programming, EMBOSS; Database search for similar protein sequences-BLAST PSI; Multiple sequence alignment & phylogenetic analysis; Derivation of restriction mapping in a DNA sequence; Open reading frame- NCBI/EXPASY; Primer designing for PCR; Molecular docking- Patch docking method.



Short term module (Two days)

- Introduction to DNA, RNA & protein
- Recombinant DNA technology; PCR –overview & types
- PCR application in diagnostics and industry
- PCR laboratory demonstration

Long term module (Five days)

- PCR- Basic principle, types
- Primer design and rules governing primer designing; PCR applications in recombinant DNA technology, site directed mutagenesis, diagnostics, industry and forensics; PCR experimental design, result analysis & trouble shooting



Short term module (Two days)

- Introduction to quality control (methods & approaches)
- Good laboratory, manufacturing & documentation practices
- Laboratory demonstration of quality control methods & instrument handling

Long term module (Five days)

- Introduction to quality control- methods & approaches
- Good laboratory, manufacturing & documentation practices; Microbiological, spectroscopic, electrophoretic, chromatographic & immunological methods;



Short term module (Two days)

Introduction to animal cell culture and its applications; Basic requirements for animal cell culture laboratory; Introduction to types of cell cultures, cell lines, culture growth media & selection; Media replacement & sub-culturing; Cell viability test & cell counting; Cytotoxicity assessment for test compounds

Long term module (Four days)

Introduction to animal cell culture and its applications; Basic requirements; Media replacement & sub-culturing; Troubleshooting; cell counting; Cell viability & cytotoxicity assessment for test compounds; Cell-based assays: assessment of ROS, mitochondrial membrane potential & apoptotic morphological changes

Workshop batches are conducted throughout the year based on student strength & requests. For requests, queries & program fees contact the co-ordinators.

❖ The registration fees range from Rs. 2,500/- to Rs. 10,000/-, and the mode of payments are:

- DD in favor of "Principal, The Oxford College of Science, payable at Bangalore" (kindly mention your name, address and phone No. behind the demand draft)
- NEFT, RTGS/IMPS to the Bank account No. 140501011002766, Name: Jnanarjana, Type: Savings, IFSC Code: VIJB0001405
- Cash at Examination fees counter.