

**Keshav Memorial Institute of Commerce and Sciences**  
**Department of Life Sciences (Biotechnology, Microbiology, & Chemistry)**  
**Activities Report for the Academic Year 2025-26**

**5 June 2025:** Workshop on Water Conservation and Management

**Resource Person:** Sri Ramachandrudu, and his team from 'Watershed Support Services and Activities Network' ( WASSAN )

Water Conservation Day was observed with great enthusiasm and active participation from students and faculty. The resource persons shared their expertise on sustainable water resource management. Their sessions emphasized the need to conserve water, highlighting both traditional and modern approaches that can be adopted at the community level to ensure long-term sustainability.

The speakers began by discussing the importance of integrated watershed management, stressing that water conservation is not just about saving water but about managing it wisely.

Several practical water conservation methods were introduced during the sessions. Rainwater harvesting was explained as a simple yet powerful technique to collect and store rooftop and surface runoff for later use. Injection borewells were highlighted as an advanced method to recharge aquifers directly, thereby improving groundwater levels. Other structures such as percolation tanks and check dams were described as effective ways to slow down runoff and enhance infiltration. The speakers also emphasized the role of micro-irrigation techniques like drip and sprinkler systems, which minimize wastage and improve efficiency in agriculture.

They have also discussed the technical methods for assessing water availability. Hydrogeological surveys were described as essential tools for mapping aquifers and understanding groundwater flow. The use of piezometers to monitor water table fluctuations was explained as a reliable way to track seasonal changes. Remote sensing and GIS technologies were presented as modern tools that allow for watershed analysis and rainfall mapping, providing valuable insights for planning. Water budgeting was introduced as a systematic approach to estimate inflow, outflow, and storage capacity, ensuring that usage remains within sustainable limits. Additionally, soil moisture sensors were discussed as instruments that help assess water retention capacity, particularly useful for agricultural planning. The speakers also touched upon isotope hydrology, a scientific method used to trace recharge sources and determine the age of groundwater, adding depth to the technical understanding of water resources.

The sessions conducted by WASSAN highlighted that water conservation is both a technical and community-driven effort. By combining traditional practices such as rainwater harvesting with modern scientific tools like GIS mapping and isotope hydrology, communities can achieve sustainable water management. The event reinforced the importance of scientific assessment, participatory planning, and practical conservation structures, reminding everyone that securing water resources is essential for the well-being of present and future generations.



**20 September 2025: Field Trip to *Analytica Lab India*, Venue: Hitex Convention Center, Gachibowli, Hyderabad**

*Analytica Lab India* was a National and International Expo that brought together product specialists and representatives from leading companies across the globe. It provided a unique opportunity for students to witness latest advancements in laboratory technologies and analytical instruments and to interact with product specialists and experts who showcased and demonstrated their products .

Students explored a wide range of equipment exhibited at the expo, to mention a few are: Advanced analytical instruments such as high-performance liquid chromatography (HPLC), gas chromatography, mass spectrometers, molecular biology tools like, electrophoresis units, spectrophotometers, centrifuges, advanced microscopes, laboratory automation systems such as robotic sample handlers, automated liquid handling stations, biosafety cabinets, fume hoods, etc.

The field trip was highly beneficial for the students as it bridged the gap between classroom learning and real-world industry practices. Exposure to global standards and technologies helped them understand the practical relevance of their academic curriculum.



## 26 September 2026: Field trip to CCMB Open Day

The CSIR–Centre for Cellular and Molecular Biology (CCMB), Hyderabad, celebrated its annual Open Day on 26th September 2025, coinciding with CSIR Foundation Day.

Students were taken through CCMB’s laboratories where they were introduced to state-of-the-art scientific equipment. Demonstrations included DNA sequencers and PCR machines, which are central to genetic and molecular biology research. Confocal and fluorescence microscopes were shown to highlight how scientists visualize cells and tissues at high resolution. Instruments such as mass spectrometers and chromatography systems were displayed to explain their role in proteomics and metabolomics. The automation of modern labs was showcased through robotic sample handlers and liquid handling systems, while biosafety cabinets and cleanroom facilities emphasized the importance of safety in handling pathogens. CCMB presented wildlife forensics kits and molecular tools used in biodiversity studies and wildlife crime investigations.

There were also poster displays where the students had the opportunity to interact with the scholars and scientists of CCMB, who displayed their research works . Posters on infectious, genetic, and lifestyle diseases explained how molecular biology helps in understanding conditions such as cancer, diabetes, and viral infections. There were also posters on Plant research, ecology and conservation, and studies on biodiversity, and on cellular processes, genome editing, and protein structure-function studies.

The visit has given the students a deeper understanding of how fundamental research translates into real-world applications.





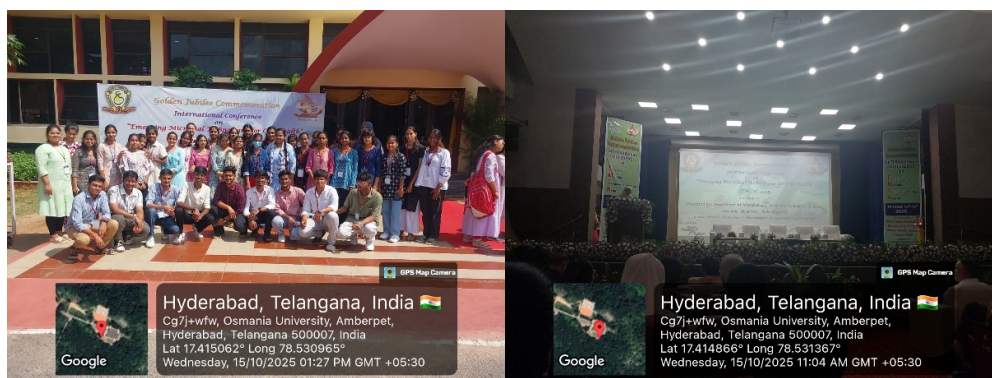
**15 October 2025:** Participation of Students and Faculty in the three-day international Conference.

The Department of Microbiology, Osmania University, organized its Golden Jubilee International Conference titled “*Emerging Microbial Technologies for ONE-Health*” from 15–17 October 2025.

The inaugural session was graced by Prof. Kumar Molugaram, Vice Chancellor of OU, who emphasized the importance of interdisciplinary collaboration in addressing global health challenges.

Dr. D. Nageshwar Reddy, Chairman of AIG Hospitals and Padma Vibhushan awardee, spoke on the gut microbiome’s role in immunity and chronic diseases. His talk underscored how microbial balance in the human body can prevent lifestyle disorders, offering students a glimpse into translational medicine. Prof. Appa Rao Podile, former Vice Chancellor of the University of Hyderabad, presented insights into plant microbiome research, stressing the potential of microbial technologies in sustainable agriculture and food security. His keynote reinforced the idea that microbes are not just agents of disease but also allies in ensuring ecological balance. Dr. Anil Kumar Puniya’s address on antimicrobial resistance, where he described microbes as “small wonders” that can be harnessed to combat global health threats. Prof. Balakista Reddy, Chairman of TSCHE, encouraged young researchers to translate microbial innovations into societal impact, reminding students that science must ultimately serve humanity.

Through this conference, students gained exposure to cutting-edge microbial research and its applications in human, animal, and environmental health.



## 28 November 2025: Department of Life Sciences, KMICS Labs Open day

Upon request from Manoranjitham High School, Life Science labs were kept open to the students. Students had the opportunity to learn about the different scientific equipment present in the lab. MSc Biotechnology students have volunteered to describe each and every equipment, their usage, and applications.



## 19 December 2025: Participation of Students and Faculty in the two-day international Conference.

The Department of Genetics & Biotechnology, Osmania University, organized the *International Conference on Biotechnological Innovations for Sustainable Development (ICBISD-2025)* on 19–20 December 2025 at Tagore Auditorium, Osmania University, Hyderabad.

This event was held as part of the Silver Jubilee celebrations of the Biotechnology program of Osmania University and brought together scientists, academicians, industry professionals, and students from across India and abroad. The conference served as a platform to highlight the role of biotechnology in addressing global challenges related to health, agriculture, environment, and industry.

The sessions covered diverse themes such as medical and animal biotechnology, plant and environmental biotechnology, bioinformatics, industrial biotechnology, and

nanobiotechnology. Eminent speakers delivered lectures on cutting-edge research and innovations, emphasizing sustainable approaches to healthcare, agriculture, and environmental conservation. The conference also featured oral and poster presentations by students and researchers, showcasing their projects and innovative ideas.

The conference was an enriching experience to the students. It provided exposure to interdisciplinary perspectives and practical applications of biotechnology, offered opportunities to interact with experts, gain insights into current trends, and understand how technological innovations can contribute to sustainable development. The event not only celebrated the achievements of the Biotechnology program at OU but also inspired participants to pursue research and innovation that address pressing societal needs.



**5 February 2026:** Guest Lecture on Careers in the Health Care industry World Wide, by Mr. B. Manikanta, AR Analyst, Sutherland, Hyderabad.

The Department organized a guest lecture on “Careers in the Health Care Industry Worldwide”, delivered by Mr. B. Manikanta, AR Analyst at Sutherland, Hyderabad.

Mr. Manikanta provided an insightful overview of the vast opportunities available in the global health care sector. He emphasized the growing demand for skilled professionals in areas such as medical billing, health informatics, clinical research, hospital administration, and pharmaceutical services. Drawing from his own professional experience, he explained the role of Accounts Receivable (AR) Analysts in supporting international health care systems, highlighting how back-end operations in India contribute to efficient patient care abroad.

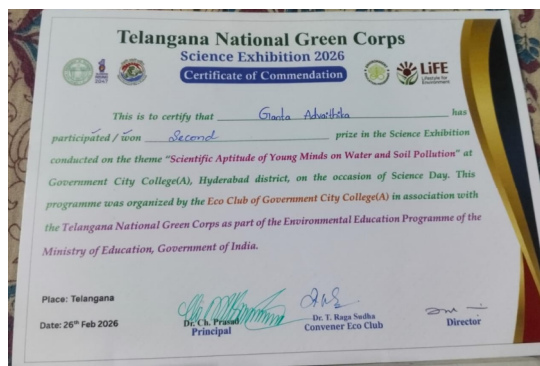
The lecture also touched upon the importance of soft skills, adaptability, and continuous learning in navigating careers across diverse health care domains. Mr. Manikanta encouraged students to explore both clinical and non-clinical pathways, stressing that the industry offers opportunities not only for doctors and nurses but also for graduates in life sciences, biotechnology, and allied fields.

Students gained valuable exposure to the global scope of health care careers, the impact of technology on medical services, and the potential for Indian professionals to contribute meaningfully to international health systems. The session concluded with an interactive Q&A,

where Mr. Manikanta addressed queries on career readiness, industry expectations, and strategies for building a successful career in health care.



**26 February 2026:** Students represented the college at Science Exhibition at Govt. City College, Hyderabad, on the theme “Scientific aptitude of young minds on water and soil pollution, and received 2<sup>nd</sup> Prize for their exhibit on Biofertilizers and Biopesticides.



**28 February 2026:** National Science Day Celebrations in KMICS

The National Science Day celebrations at KMICS were conducted with great enthusiasm on the college premises. The program centred around poster presentations prepared by students on the theme “Indian Scientists, their Discoveries, and Contributions to Science.” A large number of students actively participated, presenting the groundbreaking discoveries and inventions of eminent Indian scientists such as Dr. C. V. Raman, Dr. Homi J. Bhabha, Dr. Vikram Sarabhai, Dr. A. P. J. Abdul Kalam, and many more. The posters reflected the creativity and research skills of the students, while also paying tribute to the immense contributions of Indian scientists to global scientific progress.

The guest lecture by Prof. V. V. Haragopal, Retired Professor of Statistics, Osmania University. Prof. Haragopal, known for his expertise in applied statistics and operations research, delivered

an engaging talk on gender inequalities. He presented insights from his research, emphasizing the role of statistical analysis in identifying and addressing social disparities. His lecture encouraged students to view science not only as a tool for technological advancement but also as a means to understand and resolve pressing societal issues.

The program was further enriched by the presence of distinguished dignitaries. Dr. A. V. Subrahmanyam, Secretary of KMES, who addressed the gathering with an inspiring speech. He emphasized the importance of cultivating a scientific temper and ethical responsibility among students. Dr. Subrahmanyam highlighted that science is not merely about discoveries but about nurturing discipline, curiosity, and innovation. His words motivated students to pursue their academic journey with dedication and to contribute meaningfully to society through scientific inquiry.

Mrs. P. Shrvanathi, Principal of KMICS, delivered a heartfelt address. She spoke about the role of education in shaping future scientists and leaders, urging students to balance academic excellence with creativity and critical thinking. Mrs. Shrvanathi stressed the importance of interdisciplinary learning and collaboration, reminding students that science thrives when diverse perspectives come together. Her speech resonated deeply with the audience, inspiring them to embrace challenges and remain committed to lifelong learning.

The event concluded on a high note, with students expressing their appreciation for the opportunity to showcase their work and interact with eminent academicians. The combination of student-led presentations, expert lectures, and motivational speeches created a holistic and enriching experience, reinforcing the relevance of science in both academic and societal contexts.





**7 March 2026:** Guest Lecture on ‘Career in Medical Coding’, by Mr. Javed Hussain, Manager, Ikya Global Consulting Services,

The session was designed to introduce students to the growing opportunities in the healthcare. Mr. Hussain began by explaining the fundamentals of medical coding, describing it as the process of translating healthcare diagnoses, procedures, and services into standardized codes. He emphasized its importance in billing, insurance, and record-keeping, noting that accuracy and compliance are critical for the smooth functioning of healthcare systems.

He highlighted the career prospects in medical coding, pointing out the increasing demand for certified professionals in hospitals, insurance companies, and multinational healthcare outsourcing firms. He also informed that medical coding offers stable career growth, international opportunities, and competitive salaries, making it a promising option for students.

The lecture also focused on the skills and training required to succeed in this profession. Mr. Hussain stressed the need for a strong foundation in life sciences, anatomy, physiology, and medical terminology. He explained that certifications such as CPC (Certified Professional Coder) are highly valued and can open doors to global opportunities. He also shared industry insights from his own experience, illustrating how coders help reduce errors in medical records and indirectly improve patient care.

Towards the end of the session, Mr. Hussain suggested the students to pursue a short term training on medical coding for them to consider medical coding as a career path. He advised them to cultivate continuous learning, adaptability, and professional ethics, which are essential for success in any field.

The lecture proved to be highly informative. Students gained clarity on the scope of medical coding, the pathways to enter the profession, and the potential for global opportunities.



**10th March 2026:** Guest Lecture on ‘Awareness program on Thalassemia’, by Mrs. N. Navya, Operations Manager, Blood Warriors Foundation, Hyderabad.

The session aimed to sensitize students and faculty about the genetic disorder *Thalassemia*, its impact on public health, and the importance of preventive measures. Mrs. Navya began by explaining the medical background of Thalassemia, a hereditary blood disorder characterized by abnormal hemoglobin production. She highlighted the challenges faced by patients, including frequent blood transfusions, iron overload, and the need for lifelong medical support.

The lecture emphasized the role of awareness and early screening, particularly premarital and antenatal testing, in reducing the incidence of Thalassemia major. Mrs. Navya shared insights into the initiatives undertaken by the Blood Warriors Foundation, such as community outreach programs, counseling services, and blood donation drives to support affected individuals.

Students were encouraged to become active participants in awareness campaigns, volunteer for blood donation, and spread knowledge about genetic counseling. The interactive session allowed participants to clarify doubts regarding carrier status, treatment options, and lifestyle adjustments for patients.

The program concluded with a strong message: *“Prevention through awareness and screening is the most effective way to combat Thalassemia.”* The lecture not only enriched the students’ understanding of the disorder but also inspired them to contribute towards building a healthier society.



**22nd April 2026:** Hands on Training on ‘Heart CPR & First Aid Awareness’, at Rashtrapati Nilayam, Bollaram,

The “Hands-on Training on Heart CPR & First Aid Awareness” was conducted under the guidance of Doctors From Osmania Medical College & Osmania General Hospital, Conducted by Osmania Medical College, at Rashtrapati Nilayam, Bollaram, This program was designed to equip students, and staff, and security personnel with essential life-saving skills, focusing on cardiopulmonary resuscitation (CPR) and first aid techniques.

The training sessions combined theoretical awareness with practical demonstrations, using mannequins and simulation models to ensure participants could practice CPR techniques effectively. Medical student volunteers also assisted in guiding participants during the hands-on sessions, ensuring that everyone gained confidence in applying the skills.

The CPR training emphasized the importance of correct hand placement, compression depth, and rhythm, along with rescue breathing methods. The first aid awareness component covered immediate responses to common emergencies such as fainting, bleeding, and fractures, highlighting the critical role of timely intervention in saving lives. By allowing participants to practice on mannequins, the program bridged the gap between theoretical knowledge and practical application, instilling readiness to act in real-life scenarios.

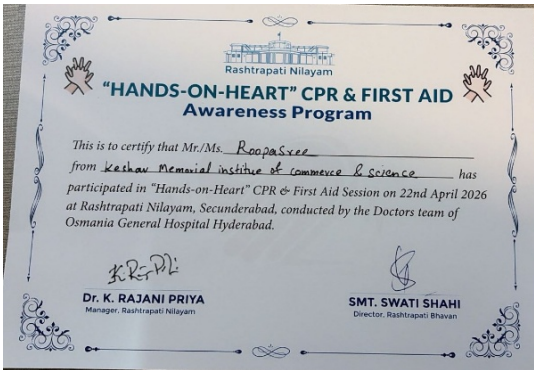
The impact of the program was significant. Students and staff not only learned the technical aspects of CPR and first aid but also developed a sense of responsibility toward community health and emergency preparedness.



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